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ABSTRACT

This report attempts to identify and analyze the causes of the differences between the earnings and employment of black males and white males. Although the earnings gap between black and white men was substantially reduced between 1940 and 1980, black men still earn less than white men. While the relative earnings of black men has risen since 1940, their relative employment has declined. Factors that influence the earnings gap include the following: (1) discrimination; (2) education; (3) region of residence; (4) industrial sector; and (5) marital status. The report finds that while a narrowing of racial differences in worker characteristics accounts for part of the earnings convergence, other factors, including declining racial prejudice, federal civil rights policies, and unmeasured changes in employment skills, must be considered. The precise effect of civil rights policy remains undetermined. Some of the evidence attributes earnings differentials to differences in knowledge and skills acquired in school. Further research on the following issues is recommended: (1) the effect of civil rights programs; (2) black-white differentials in educational attainment; (3) declining labor force participation among younger black men; (4) upward earnings bias due to labor force withdrawal; and (5) the failure of the black-white unemployment gap to narrow. The report includes four appendices, a bibliography, 51 statistical tables, and nine figures. (AF)

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The Economic Progress of Black Men in America

United States Commission on Civil Rights

Clearinghouse Publication 91
October 1986

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The U.S. Commission on Civil Rights is an independent, bipartisan agency first established by Congress in 1957 and reestablished in 1983. It is directed to:

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- Study and collect information concerning legal developments constituting discrimination or a denial of equal protection of the laws under the Constitution because of race, color, religion, sex, age, handicap, or national origin, or in the administration of justice;
- Appraise Federal laws and policies with respect to discrimination or denial of equal protection of the laws because of race, color, religion, sex, age, handicap, or national origin, or in the administration of justice;
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The Economic Progress of Black Men in America

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The report was prepared under the overall supervision of June O'Neill, Assistant Staff Director for Programs and Policy.

This report is part of a larger project on the incomes of Americans. The members of the advisory committee to the project are: Prof. Glen Cain, Department of Economics, University of Wisconsin; Prof. Claudia Goldin, Department of Economics, University of Pennsylvania; Prof. Glenn Loury, John F. Kennedy School of Government, Harvard University; Prof. Jacob Mincer, Department of Economics, Columbia University; Prof. Stephan Thernstrom, Department of History, Harvard University; Prof. Finis Welch, Department of Economics, University of California at Los Angeles.

Other outside experts who have provided helpful comments include, alphabetically: Prof. Alfred Blumrosen, Rutgers Law School, Rutgers; Prof. Charles Brown, Department of Economics, University of Michigan; Prof. Barry Chiswick, Department of Economics, University of Illinois at Chicago; Prof. Reynolds Farley, Department of Sociology, University of Michigan; Dr. Harry Gilman, U.S. Department of Labor; Prof. Nathan Glazer, Graduate School of Education, Harvard University; Prof. Eric Hanushek, Department of Economics, University of Rochester; Prof. Robert Higgs Department of Economics and Business, Lafayette College; Prof. Robert Margo, Department of Economics, Colgate University; Prof. William J. Wilson, Department of Sociology, University of Chicago.

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Executive Summary

The economic status of black men in the United States has shown substantial long-run improvement. Between 1940 and 1980, the real earnings of black men increased 340 percent versus 164 percent for white men. As a result the earnings gap between black men and white men was reduced by close to half.

Although this impressive gain is cause for optimism, the fact remains that black men still do not earn as much as white men. Moreover, although the relative earnings of blacks have increased considerably, their relative employment has declined. In the light of a 350-year history of racial discrimination, officially sanctioned in many places until less than 25 years ago, the persistence of racial differences in economic status is a natural source of concern. It underscores the importance of monitoring and studying the position of blacks in America.

This report constitutes a major attempt to identify and analyze the causes of black-white differences in male earnings and employment. It is the first in a series of studies on the economic status of different ethnic and racial minorities and women. The idea for this large-scale project was initially developed by Commissioner John H. Bunzel. As an analysis of discrimination in the workplace, the project fulfills the mandate of the United States Commission on Civil Rights to present reports to the President, Congress, and the Nation on discrimination on the basis of race, color, sex, age, religion, handicap, or national origin.

The problems facing the black community are complex. This report examines black-white differences in labor market status among adult men, while planned reports will deal with black-white differences among women and youth.

The study focuses on the years 1940 to 1980, a period spanning roughly the 20 years before and 20 years since the Civil Rights Act of 1964 created legal sanctions against racial discrimination in employment. An important new source of data—microdata files from the 1940 through 1980 decennial Censuses of Population—is utilized to derive many of the measures used in the analysis. The principal advantages of these data files are that they provide large samples and define variables consistently over time.

Trends in Earnings

Between 1940 and 1980, the gap in earnings between black men and white men was substantially reduced, although the pattern of change differed from decade to decade. The earnings gap narrowed most rapidly during the 1940s. It remained largely unchanged during the 1950s but then continued to narrow again during the economic boom of the 1960s and even during the weaker macroeconomic climate of the 1970s. The uneven growth in relative earnings during the 1940s and 1950s may reflect the economic consequences of World War II. Proportionately more white than black men served in the war, and as a result, the earnings of white men may have been depressed during the readjustment period after the war, only to rebound in the 1950s. The relative earnings of blacks did not slip back during the 1950s, evidence that the gains made by blacks during the 1940s were not merely a wartime bubble, but represented genuine progress.

The decades in which black-white earnings differences have narrowed most sharply are not always those in which the earnings of blacks, taken alone, have grown the fastest. For instance, the real earnings of black men grew rapidly during the 1950s (at a rate of 3.4 percent a year), but this increase did not exceed that enjoyed by whites, for whom the 1950s were the best decade of the 1940–1980 period. Conversely, racial differences in earnings continued to narrow during the 1970s, even though the real earnings of black men increased by less than 2 percent a year because of a sluggish economy. (Among younger black men in the 1970s, the rate of increase was only 0.6 percent annually; white male earnings fell.) Only during the 1940s and 1960s, decades of strong economic growth, did blacks experience both relative and absolute gains in earnings. Still, racial differences in earnings have narrowed considerably, and the process has been underway since at least 1940.

The report also examines racial differences and trends in earnings inequality. With the exception of 1940, the analysis reveals that earnings inequality is greater among blacks than among whites. Unlike the trend in average earnings, there does not appear to be any tendency for racial convergence in earnings inequality.

The relatively high unemployment of black men and the greater sensitivity of their employment to the business cycle explain some of the difference in earnings inequality between blacks and whites as well as the detailed pattern of this difference from decade to decade.

Trends in Labor Force Participation and Unemployment

Although black men have made substantial gains in relative earnings, their relative employment has declined as a consequence of both a decline in labor force participation and a rise in unemployment relative to whites.

Between 1940 and 1980, the labor force participation of men declined. The decline was particularly large among older men and men with less than 12 years of schooling, and it accelerated after 1960. Black male participation fell considerably more than that of whites, even when schooling and age are held constant. For example, between 1960 and 1980, the decline in labor force participation rates among men aged 45–54 with 0–11 years of school was about 12 percentage points for blacks and 8 percentage points for whites.

Much of the decline in the labor force participation of both black and white men aged 45–64 is attributed to the liberalization and rising benefit levels of Federal disability programs (supplemented by food stamps and other benefits). This hypothesis is supported by a variety of evidence and outside research. For instance, during the 1960s and 1970s, there was a surge in the number of men who reported not working during the year because of a disability. This increase coincided with the greatest expansion of disability programs and cannot be attributed to a worsening in men's health. Unemployment, on the other hand, was found to have played only a minor role in the downward trend in labor force participation. This role was largely cyclical, as fluctuations in unemployment were echoed by small fluctuations in the number of discouraged workers and, hence, in the size of the labor force.

The disproportionate decline in labor force participation among older black men can be traced to their greater incidence of disability and lower incomes, and to the fact that Federal disability benefits and other transfers are relatively more generous at lower income levels.

The decline in labor force participation among younger black men (25–34) was not so great as at older ages, and it is less readily explained. Increased involvement in crime and imprisonment and a decline in marriage possibly underlie the decline in work attachment, but there may be complex interactions among these factors, each of which may cause and be affected by the others.

In addition to differences in labor force participation, a significant racial differential in unemployment has persisted over the decades, even within schooling and regional categories. The differential in unemployment has always been much larger in the North than in the South. This was especially true in the period 1940–1960, despite the greater levels of discrimination against blacks in the South. One explanation for the relatively low black unemployment rate in the South was the relative absence of unionization or other pressures to equalize pay. As a result, discrimination in the South may have been reflected in lower pay, rather than in diminished employment opportunities. The widening of the black-white gap in unemployment over the 1940–1980 period remains puzzling, however, in light of

the narrowing of racial differences in schooling and occupation.

The relative decline in employment of black males, in addition to being a matter of concern in itself, may produce an upward bias in the growth of relative black earnings. If those who leave the work force have relatively low earnings, their departure will cause an artificial increase in the earnings of the remaining work force. Because black employment has declined significantly more than white, the growth in black male earnings is potentially overstated to a greater degree than would be the case for whites. This relative overstatement in earnings growth would cause an illusory narrowing of the earnings gap. Empirical research suggests, however, that this potential bias, under most plausible assumptions, would not account for a large share of the growth in the relative earnings of black males.

Discrimination and Other Sources of the Earnings Gap

One of the goals of this report is to provide analysis that will help inform the national debate over how best to aid minorities. Isolating the underlying causes of racial differences in earnings will enable government to formulate more effective civil rights and social policies.

Discrimination is one potential source of earnings differences between blacks and whites. Discriminatory behavior in the current labor market by employers, fellow workers, or consumers could lead to lower earnings and occupational status for blacks. Because of the influence of education and training on earnings, however, the shadows of past discrimination must also be considered.

Discrimination against blacks in State and local government expenditures on schooling is likely to have affected racial differences in educational attainment seen among workers today. Measures of skills acquired in on-the-job training over the years can also reflect employer discrimination in training offered to blacks. Moreover, past discrimination in the labor market may have reduced the incentive of blacks to obtain training or education.

These distinctions are important. Remedies for the effects of past discrimination (for example, improving school resources) are quite different from remedies for current labor market discrimination (for example, litigation under the Civil Rights Act).

A method of directly measuring labor market discrimination has not yet been developed. Instead, empirical studies of discrimination typically assess the factors that appear to be related to skills or productivity, and they then adjust the wage gap for racial differences in these factors. If all racial differences in productivity could be measured perfectly, then the amount of the wage gap left unexplained after accounting for skills could be said to reflect current discrimination in the labor market.

Because of the problems involved in measuring productivity, definitive estimates of current labor market discrimination cannot be obtained. But an analysis of the major factors contributing to the black-white wage gap can enlighten our understanding of the sources of the gap and why it narrowed over time. Such an analysis can also provide insight into the possible role of market and governmental discrimination.

The report examines at length several broad factors that are believed to have important effects on earnings and the wage gap: schooling, region of residence, industrial sector, and marital status.

Education has traditionally been the key to economic progress for groups starting out with disadvantages, and it has been particularly important to blacks because of the extreme educational disadvantages that they initially experienced. At emancipation, and for several decades thereafter, most blacks lived in poor rural counties of the South where they were allocated a disproportionately small share of school resources. The men whose experiences are documented in this study were born between 1876 and 1955. The circumstances of their southern roots have been an important impediment to black economic development.

Despite these initial handicaps, blacks have made enormous gains in education, sharply narrowing the gap with whites in years of school completed. The measured increase in the relative schooling of blacks may even be understated, both because the schooling of older black cohorts who attended ungraded schools was likely overstated in the 1940 and 1950 censuses and because racial differences in the quality of schooling likely narrowed.

Differences in *region of residence* and *industrial sector* of employment have also affected the relative productivity of blacks. Historically, an important reason for low relative earnings among black males has been the disproportionately large concentration of the black population in the South, where wages are relatively low. The migration of blacks from the South to high-wage urban areas of the North

between 1940 and 1970 contributed to the reduction in the earnings gap during these years. Rapid economic growth in the South relative to other regions, however, has narrowed the North-South earnings gap, especially among blacks. Consequently, southern location has had a diminishing effect on the earnings gap.

Similarly, the relatively large concentration of black workers in the low-paying agricultural sector accounted for some of the black-white differential in earnings in the past, especially prior to the 1960s. The subsequent shift of blacks into the higher paying government and nonagricultural sectors accounts for some of the observed narrowing in earnings differences. These trends, however, appear to have run their course.

Accounting for Trends in the Earnings Gap

Factors such as schooling, geographic region, and type of employment probably have interactive and overlapping effects on earnings. This study reports on a multivariate analysis that was undertaken to measure the joint effects of these factors on the black-white earnings gap and on the trend in the gap over the 1940–1980 period.

Trends in the Gap

Changes in educational attainment, region of residence, and industry of employment have played an important role in narrowing the earnings gap between 1940 and 1980. For instance, between 1940 and 1980 the earnings of young blacks (ages 25–34) grew 62 percent faster than the earnings of young whites; of this relative gain, nearly 40 percent can be attributed to a narrowing in racial differences in characteristics. Nonetheless, this leaves more than half of the convergence in earnings unexplained.

The growing similarity between the races in years of schooling, region of residence, and industrial sector does not account for much of the observed narrowing in the racial gap in earnings and suggests that other factors may supply the full explanation. The leading candidates that potentially can help account for the unexplained convergence in the earnings gap are declining racial prejudice, governmental civil rights policies, and unmeasured changes in employment skills (for example, from improved school quality). Overstatement of the earnings gain due to differential patterns of labor force withdrawal may also play a role. These factors are hard to quantify, although qualitative evidence and research findings on their importance can be examined.

Effects of Civil Rights Policy

Federal civil rights programs and policies have undoubtedly contributed to a reduction in discriminatory behavior in the labor market. Studies reviewed in this report suggest that civil rights policies have contributed to the improvement in the relative earnings of black men. Because of data limitations, however, the studies do not provide conclusive evidence about the magnitude of the effect of civil rights policies generally, nor do they determine the specific contribution of individual policies.

Studies based on time-series data have found an upward trend in relative black earnings after 1964 that cannot be explained by the 1948–1963 earnings trend or by changes in variables such as relative black educational attainment. The time-series analyses exclude many important variables, such as changes in attitudes or changes in unmeasured skill factors that may have contributed to the upward trend in relative black earnings. Because they are limited to the period after 1948 (when earnings data first become available on an annual basis), these studies exclude the 1940s when, according to this report, the relative earnings of blacks increased faster than in any other single decade between 1940 and 1980. The omission of the 1940s from these analyses may result in an overestimate of the effect of civil rights policies on earnings growth after 1964. Given these limitations, it has not been established how much civil rights policies have contributed to the growth in relative black earnings.

In contrast to time series studies, which examine civil rights programs as a whole, studies of the Federal contract compliance program focus on a specific program, in this case one that imposes affirmative action requirements on firms with Federal contracts. Although these studies find that the program is associated with increased black employment in firms with Federal contracts, they do not provide strong evidence that the program has provided jobs for those who ordinarily would not have one. That is, the program may have largely resulted in the shifting of employed men from one kind of firm to another. The fact that the relative employment of blacks declined significantly during the period under analysis raises the question whether the contract compliance program has, on balance, increased black employment.

In sum, research has not yet determined the precise role of civil rights policies in improving the labor market status of black men. Research in this area is complicated by the many forces, both public and private, that have operated to improve the economic status of blacks. The same forces, such as the civil rights movement, that led to the passage of civil rights legislation, by themselves may have broken down discriminatory barriers and influenced public attitudes about race.

Moreover, it has not proven possible to identify the specific contributions of the various civil rights programs and policies. The Civil Rights Act of 1964 undoubtedly broke down barriers for many blacks, and it also may have served as a catalyst in reducing prejudice among employers and white coworkers. The effects of Title VII litigation and the pressures of the Federal contract compliance program may also be important factors influencing the increase in relative black earnings. Unfortunately, existing empirical studies have not been able to disentangle the effects of these different types of civil rights activities.

The Level of the Gap in 1980

The report's analysis of the sources of the earnings gap in 1980 indicates that racial differences in certain relevant characteristics can account for 30 to 40 percent of the earnings gap, depending on the age group examined. After adjusting for years of school, region of residence, industrial sector, and marital status, the weekly earnings of black workers aged 25–34 were 12.6 percent lower than those of white workers; at ages 45–54, this unexplained residual was 22 percent.

The size of the earnings gap varies considerably among detailed region-education groups and according to the earnings measure used (hourly, weekly or annual). For instance, the hourly earnings gap is small among 25–34 year olds living outside the South: 3.5 percent for college graduates, 9 percent for high school graduates, and 5.4 percent for those with 8–11 years of school. This differential is larger when measured by weekly earnings (ranging from 8.6 to 14.5 percent) and even larger when measured by annual earnings (from 11.7 to 20 percent). It is a matter of judgment as to which is the best measure.

The various measures of the earnings gap in part may reflect past and present discrimination in the labor market and in part omissions of data on worker characteristics that affect productivity. Achievement tests are often used to assess the marketable knowledge and skills acquired in schools. The evidence reviewed in the report showed large differences in scores between blacks and whites with the same nominal amount of schooling. These differences have been attributed to differences in family background (parents' education and occupation, and family income) as well as to differences in the quality of schools attended. Several studies have attempted to measure the link between earnings and the skills measured by test scores. Based on these relations, at least a third of the remaining differential in weekly earnings among 25–34 year olds may be attributed to differences in knowledge and skills learned in school. The fact that recent results show that black-white differences in achievement scores have begun to converge is a hopeful sign for future convergence in the wage gap.

Concluding Comments

Changing racial differences in measured characteristics, such as years of schooling and geographic region, account for some of the narrowing in the wage gap between 1940 and 1980. According to the data analyzed, however, these changes were not the primary forces underlying the trend.

Black-white earnings ratios rose considerably from generation to generation even when the comparison was confined to population groups narrowly defined by years of school, region, and age. There is evidence that improvements in the quality of schools attended by blacks and declining discrimination in the labor market both contributed to the relative gain in earnings made by blacks during the 1940–1980 period.

The decline in labor market discrimination appears to have occurred both before and after the Civil Rights Act of 1964 was passed. In the earlier period, the decline in discrimination may have been prompted by events, such as World War II, that made white Americans more aware of racial prejudice. In the recent period, the civil rights movement and government antidiscrimination policy undoubtedly have played a positive role.

Although the wage gap narrowed substantially over the 1940–1980 period, it has not been eliminated. After adjusting for years of school completed, region of residence, and other measurable characteristics, a gap in weekly earnings of 12.6 percent for 25–34 year olds remains. The remaining gap is in part attributable to unmeasured differences in work-

er characteristics that affect productivity. For instance, racial differences in achievement test scores suggest that black-white differences still exist in terms of knowledge and skills acquired in school. Persistent racial discrimination in labor markets may well account for part of the current differential in earnings, but its share cannot be determined with available data.

What Has Happened Since 1980?

The black-white gap in earnings has remained roughly constant since 1975. The constancy of the gap during the early 1980s is noteworthy because that period was characterized by the worst recession since the 1930s. (The overall male unemployment rate grew from 5.1 percent in 1979 to 9.9 in 1982 and 1983 and then fell back to 7.0 in 1985.) In view of the greater cyclical sensitivity of black earnings and employment, it would not have been surprising to see the relative earnings and employment status of blacks deteriorate and then rebound during this period. Such a pattern seems to appear in annual earnings data from the Current Population Survey. However, the black-white ratio of annual earnings for full-time year-round workers stayed relatively constant during the period—about 70 percent. Differences in labor force participation rates have also remained constant, breaking a decades-long trend of relative declines in black male labor force participation.

Issues for Future Research

Several issues remain unresolved and warrant additional research. The following are particularly important:

- Existing research has not been able to assess fully the effects of specific civil rights programs and policies on the economic status of blacks. For instance, although studies of affirmative action have found that Federal contractors increased their employment of blacks more than noncontractors, it is not known whether the men hired by contractors would have been employed in good jobs even without the program or whether the program resulted in a *net* increase in black male employment. More research is needed to determine the full effect of civil rights programs on the earnings and employment of black men.
- A substantial differential remains in the educational attainment of black and white men in terms of years of school completed and of scholastic achievement. A considerable body of research, including this report, has demonstrated the importance of schooling as a means of upward mobility. Future research should investigate the various public and private factors that affect scholastic achievement.
- The decline in labor force participation among younger black men, at a time when other indicators of economic success (i.e., earnings) have been improving, is not well understood. Several causal factors were suggested, including worsened employment opportunities, increased involvement in crime and imprisonment, and declining marriage rates. These and other possible factors, and their interactions, should be investigated in greater depth. Research dealing with effects of diminished work attachment on the future earnings and employment of younger men is also needed to help assess the importance of the recent trends.
- Accurate measures are needed of the possible upward bias in earnings resulting from the decline in labor force participation. Existing research has used indirect statistical methods to estimate the possible effect of "selection bias" on earnings gains and on the black-white earnings gap. Direct information on the prior earnings of those who withdraw from the labor force is needed before any firm conclusions can be drawn. If the earnings gains of black men are found to be seriously biased by labor force withdrawal, then it would be necessary to reevaluate the extent to which discrimination has abated and, specifically, the extent to which civil rights policies have raised the economic status of black men.
- The failure of the black-white gap in unemployment to narrow is puzzling in view of the convergence in education and occupational status. Research on this subject is limited, and additional theoretical and empirical work is needed.

Introduction

The economic status of black men in the United States has shown substantial long-run improvement. Between 1940 and 1980, the real earnings of black men increased by 340 percent versus 164 percent for white men. As a result the earnings gap between black men and white men was reduced by close to half.

Although this impressive gain is cause for optimism, the fact remains that black men still do not earn as much as white men. Moreover, although the relative earnings of blacks have increased considerably, their relative employment has declined. In light of a 350-year history of racial discrimination, officially sanctioned in many places until less than 25 years ago, the persistence of racial differences in economic status is a natural source of concern. It underscores the importance of monitoring and studying the position of blacks in America.

This report constitutes a major attempt to identify and analyze the causes of black-white differences in male earnings and employment. It is the first in a series of studies on the economic status of different ethnic and racial minorities and women. The idea for this large-scale project was initially developed by Commissioner John H. Bunzel. As an analysis of discrimination in the workplace, the project fulfills the mandate of the United States Commission on Civil Rights to present reports to the President, Congress and the Nation on discrimination on the basis of race, color, sex, age, religion, handicap, or national origin.

The problems facing the black community are complex and will be addressed in several reports. This report focuses on research about black-white differences among adult men, while planned reports will deal with black-white differences among women and youth.

One of the major goals of this report is to provide analysis that will help inform the national debate over how best to aid minorities. Isolating the underlying causes of the economic condition of blacks enables formulation of effective civil rights and social policies. If the causes of black gains in relative economic status are incorrectly identified, future policies aimed at improving the economic status of blacks may prove ineffective.

Our conclusions point to a number of factors that contribute to the wage gap and its narrowing over time: the convergence in the educational attainment of black and white men; the massive migration of blacks away from the rural South, long the Nation's poorest region; the shift of black men away from agricultural labor and towards more economically rewarding sectors; and a decline in labor market discrimination. The report finds that the negative effect of labor market discrimination on the earnings of blacks, though still evident, abated significantly between 1940 and 1980. This is attributed to societal forces that changed attitudes, such as the civil rights movement, and to government policy, such as the Civil Rights Act of 1964. The analysis also suggests that many of the factors which have increased the relative wages of black men were themselves facilitated by declining racial discrimination. For instance, governmental discrimination in the provision of schooling and an atmosphere of declining racial

prejudice provided added incentive for blacks to acquire more schooling and training.

The report is organized as follows. Part I presents an overview of racial patterns in earnings and employment for the years 1940 through 1980. Chapter 1 explores basic trends in various measures of individual economic status and in the economy, examining the shift in the national economic picture as well as the unique position of black Americans. Chapter 2 examines trends in employment and unemployment, and investigates why black labor force participation has fallen considerably below that of whites while black unemployment remains much higher.

Part II examines sources of the earnings gap between black and white men. Chapter 3 examines economic theories of discrimination and the problems of measuring the effect of discrimination on earnings. Chapters 4 and 5 identify several important determinants of earnings and examine each as a potential source of the earnings gap and as a force in narrowing the gap since 1940. Education (covered in chapter 4) plays a key role in the analysis because it was withheld from blacks during slavery and was meagerly provided to them for a 75-year period after emancipation. The eventual increase in educational resources available to blacks was an important factor in their economic rise. Other major factors considered include region of residence and industry (chapter 5). Chapter 6 presents a multivariate statistical analysis of the effect of all of these characteristics on the relative earnings of black men over the 1940–1980 period.

Part III explores various hypotheses as to why the wage gap has narrowed. Chapter 7 describes the major civil rights programs and policies and evaluates their effects on black wages and employment. Chapter 8 provides an overall assessment of the various forces, measured and unmeasured, that have contributed to the narrowing of the wage gap and of the factors that underlie the remaining differential. The final section of the report presents concluding remarks and an agenda for future research.

PART I

An Overview of Racial Patterns in Earnings and Employment, 1940–1980

The first part of this report presents an overview of patterns in earnings and employment for black and white men between 1940 and 1980. Chapter 1 examines basic patterns in earnings. Chapter 2 explores trends in employment and unemployment and investigates the causes of declining black male employment.

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Chapter 1

Trends in Earnings and the Economy

Between 1940 and 1980, the earnings of black men rose from 42 percent to 69 percent of the earnings of white men, reducing the black-white gap in earnings by close to half. This chapter describes these gains in earnings, primarily using the decennial Censuses of Population from 1940 to 1980. Various methods of defining earnings and specifying the sample are employed in the analysis. The analysis tries to determine to what extent the observed gain in the relative earnings of black men represents true progress rather than simply reflecting transitory economic conditions in particular census years. In addition to comparing the average earnings of blacks and whites, the within-race distribution of earnings is explored. The basic objective is to examine whether the gains made by blacks were shared equally by low- and high-income individuals.

Earnings Growth

The expansion of the aggregate economy is a principal means by which earnings grow for blacks and whites. The past 40 years, though punctuated by recessions, have been, for the most part, a period of sustained real gains in earnings.[1] The magnitude of earnings gains, however, has varied considerably from decade to decade. Table 1.1 shows these gains expressed as average annual growth rates.[2] Between 1940 and 1980, the real annual wage and salary earnings of white men grew by 164 percent while the earnings of black men rose by 340 percent.

Economic growth during the 1940s was rapid, propelled, in part, by recovery from the Great Depression and accelerated by mobilization and production for World War II. These years were marked by exceptionally rapid earnings growth among blacks (5.9 percent per year). In fact, the earnings gains made by blacks in this decade exceeded those of any other decade between 1940 and 1980. More modest gains were made by whites in the 1940s (2.5 percent per year). During the 1950s earnings growth accelerated rapidly among whites to 3.8 percent but slowed among blacks to a rate of 3.4 percent. In the 1960s, earnings rose among blacks to an annual rate of more than 4 percent while the corresponding figure for whites was 3 percent.

During the 1970s, earnings growth slowed considerably for both races although black gains continued to exceed white gains. This slowdown was particularly severe among younger workers—the members of the large baby-boom cohort. Among white men ages 25–34, for example, real earnings actually declined slightly over the decade.

[1] Comprehensive data on the earnings or income of the population are not available before 1940. The information that is available suggests that between emancipation and 1940, in some periods blacks made greater income gains than whites and in others they did not. Robert Higgs (1977) estimates that the per capita income of blacks rose from 24 to 35 percent of the per capita income of whites between 1867–1868 and 1900. Also see Higgs (1986) for a discussion of relative changes in black income and other indices of economic well-being before 1940.

[2] Most tabulations presented in this report are based on information derived from the decennial Censuses of Population. These data are detailed in app. A.

TABLE 1.1

Real Earnings Growth: Average Annual Percentage Rates of Change for Men by Race and Age

	1940-1950	1950-1960	1960-1970	1970-1980
Ages 25-34				
Whites	3.5	3.9	2.9	−0.2
Blacks	6.5	3.4	4.5	0.6
Ages 35-44				
Whites	2.2	3.9	3.0	1.0
Blacks	5.7	3.6	4.0	2.0
Ages 45-54				
Whites	1.9	3.4	3.3	1.3
Blacks	5.4	3.2	4.4	2.5
Ages 55-64				
Whites	1.9	3.6	2.8	1.6
Blacks	5.0	3.3	4.1	2.6
Total				
Whites	2.5	3.8	3.0	0.6
Blacks	5.9	3.4	4.2	1.7

Note: Tabulations based on annual wage and salary earnings of male wage and salary workers with any earnings during the year. The self-employed and unpaid family workers are excluded.

Source: Census of Population, 1940-1980, Public Use Sample.

TABLE 1.2

Black-White Annual Wage and Salary Ratios for Men by Age

Ages	1940	1950	1960	1970	1980
25-34	46.6	62.2	59.6	69.7	75.3
35-44	40.4	56.8	55.4	60.9	67.8
45-54	38.2	53.5	52.5	58.4	65.4
55-64	39.2	52.9	51.3	58.4	64.6
Total	41.5	57.4	55.3	62.3	68.9

Note: Tabulations based on wages and salaries of male wage and salary workers who worked in calendar year. The self-employed and unpaid family workers are excluded.

Source: Census of Population, 1940-1980, Public Use Sample.

Changes in the Relative Earnings Differential

The fact that the earnings of black males have been rising more rapidly than the earnings of white males means that the ratio of the earnings of blacks to the earnings of whites has increased. This section examines the growth of relative earnings over the past 40 years using different definitions of earnings.

Summary measures for adult males (ages 25–64) are shown in table 1.2. The data indicate that the mean annual earnings of black wage and salary workers rose from 42 percent to 69 percent of the mean annual earnings of whites between 1940 and 1980. Thus, nearly one-half of the earnings gap of 1940 was eliminated over this period.

Table 1.3 presents measures of the black-white ratio calculated on the basis of mean *weekly* earnings.[3] The weekly earnings ratios are higher than the annual earnings ratios, reflecting the fact that blacks, on average, work fewer weeks per year than whites. The overall trends, however, are very similar. Between 1940 and 1980, the relative *weekly* earnings ratio rose 28.4 percentage points while the *annual* earnings ratio rose 27.4 percentage points.

Ratios of black-white *hourly* earnings are higher still (table 1.4), reflecting the fact that, on average, blacks work fewer hours per week than whites.[4] The increase in relative earnings for blacks between 1940 and 1980 is again somewhat greater when calculated on an hourly basis—up 32.7 percentage points.

The calculations described above exclude self-employed workers. This rule is often applied in the analysis of earnings because of the practical difficulty in separating the returns on labor from the returns on capital investments by the self-employed in their own firms. Furthermore, decennial census data on self-employment earnings are believed to be of poor quality.

These qualifications notwithstanding, earnings ratios that include self-employed men can be computed for 1950–1980 and are presented in table 1.5. These ratios are lower than those based solely on wage and salary workers because the self-employed, who generally have higher than average earnings, are disproportionately white. Inclusion of the self-employed, however, results in a greater apparent increase in relative earnings over time than is observed for wage and salary workers alone. Between 1950 and 1980, the "total" earnings ratio (table 1.5) rose by 15 percentage points compared with an increase of 11 percentage points for wage and salary workers.

In sum, the convergence of racial differences in earnings is clearly evident. Similar trends are observed whether the calculations are made on an annual, weekly, or hourly basis and regardless of whether wages and salaries or total earnings are examined.[5]

Patterns of Growth

The relative earnings of black men between 1940 and 1980 did not grow at a constant pace (see table 1.6). By far the most rapid advance occurred during the 1940s. In sharp contrast, relative black earnings barely increased on an hourly basis and even declined slightly on an annual basis during the 1950s. In fact, this was the only decade during the 40-year period in which the earnings of blacks did not rise more rapidly than the earnings of whites. From 1960 to 1980, the relative annual earnings of blacks rose steadily, increasing by about 7 percentage points in each decade.

When hourly earnings are examined, the same basic pattern of decade by decade changes in relative earnings appears as in the annual data, but there are some important differences. For example, the increase in the hourly earnings ratio exceeded the gain in the annual earnings ratio during those decades when the relative unemployment of blacks increased. These decades are 1940–1950, 1950–1960, and 1970–1980.[6] Similarly, when relative unemployment fell, as from 1960–1970, the annual earnings ratio increased by more than the hourly ratio.

It is striking that when the analysis is broken into two periods—1940–1960 and 1960–1980—that

[3] The 1940 ratios also include a partial control for hours and, therefore, are not strictly comparable to the other years. This is an unavoidable characteristic of the 1940 census, which asked for full-time equivalent weeks rather than simply weeks worked.

[4] For 1940, estimates of hours worked per year are based on the assumption that a full-time equivalent week reflects 40 hours. For other years, estimated hours worked reflect the product of weeks worked in the previous year and hours worked in the survey week. These calculations are limited to individuals at work in the survey week. The results of an analysis of the selectivity impact of this limitation indicate that restricting the sample in this fashion has a very small effect on earnings ratios. Hourly earnings tabulations are based on an hours-weighted mean of individuals' hourly earnings.

[5] The sensitivity of the calculated ratio to inclusion or exclusion of specific groups such as the self-employed, students, the armed forces, etc., is examined in detail in app. B.

[6] See fig. 1.2 and the discussion below. Also see chap. 2.

TABLE 1.3

Black-White Weekly Wage and Salary Ratios for Men by Age

Ages	1940	1950	1960	1970	1980
25-34	48.9	66.4	63.7	71.7	79.4
35-44	43.0	60.6	59.5	63.3	70.8
45-54	40.2	56.0	56.2	60.5	68.2
55-64	40.6	55.9	55.0	59.8	65.7
Total	43.6	60.8	59.2	64.3	72.0

Note: Tabulations are based on wages and salaries of male wage and salary workers who worked in calendar year. The self-employed and unpaid family workers are excluded. Weeks worked reported in 1940 census are the "full-time equivalent" weeks worked during 1939. Actual weeks worked are reported for 1950-1980.

Source: Census of Population, 1940-1980; Public Use Sample.

TABLE 1.4

Black-White Hourly Wage and Salary Ratios for Men by Age

Ages	1940	1950	1960	1970	1980
25-34	48.9	68.4	67.2	76.1	84.3
35-44	43.0	62.6	63.6	67.2	75.9
45-54	40.2	57.7	59.7	64.2	72.7
55-64	40.6	56.3	57.6	62.6	68.6
Total	43.6	62.4	62.6	68.0	76.3

Note: Calculated by dividing weekly earnings (see note to table 1.3) by hours worked during survey week.

Source: Census of Population, 1940-1980; Public Use Sample.

TABLE 1.5

Black-White Annual Total Earnings Ratios for Men by Age

Ages	1940	1950	1960	1970	1980
25-34	—	57.5	57.4	68.1	74.0
35-44	—	51.0	51.8	58.0	64.7
45-54	—	46.5	48.1	55.5	62.7
55-64	—	46.5	47.4	54.9	61.5
Total	—	51.2	51.6	59.4	66.2

Note: Tabulations are based on sum of wages and salaries and self-employment income for individuals who worked in calendar year. Self-employment income was not reported in 1940.

Source: Census of Population, 1940-1980; Public Use Sample.

TABLE 1.6

Change in Black-White Earnings Ratios by Decade for Men Ages 25-64 (percentage points)

	Annual earnings	Hourly earnings
1940-50	+15.9	+18.8
1950-60	−2.1	+.2
1960-70	+7.0	+5.4
1970-80	+6.6	+8.3

Source: Tables 1.2 and 1.4.

roughly correspond to the decades before and after passage of the Civil Rights Act of 1964, the convergence in earnings is found to proceed at roughly similar rates. For the first 20 years, relative annual earnings increased by 13.8 percentage points; for the next 20 years, relative earnings increased by 13.4 percentage points. (In percentage terms, the earnings ratio grew faster during the first half of the sample period, 33 percent compared to 25 percent.) This pattern of growth suggests that forces were at work to narrow the earnings gap even before the emergence of the major Federal civil rights programs and policies. These forces probably included relative gains in black educational attainment, migration of blacks from the South to the North, and a general decline in discrimination. (For example, the specter of Nazism during World War II may have led to a reduction in racial prejudice.) Although civil rights programs undoubtedly played an important role in narrowing wage differences, they were one of several sources of black gains.

In sharp contrast to the growth decades of the 1940s, 1960s, and 1970s, the negligible gains in relative earnings of black males during the 1950s appear anomalous. One possible explanation for this relates to the labor market consequences of World War II. The expansion of industrial production during the war is likely to have accelerated the movement of black workers from low-wage agricultural jobs, predominantly in the South, to higher paying jobs in urban areas. Had there been no war, this migration and the concomitant rise in black wages might have been smaller during the 1940s and greater during the 1950s. Also, the war interrupted work careers and postponed schooling for many men. Since a greater proportion of white than black men participated in the war, the temporary interruption of skill development might have depressed the

earnings of whites and inflated the black-white earnings ratio from its "true" level.[7] The fact that the earnings of whites accelerated during the 1950s may reflect a "catch up" following the disruption of the war. Although the earnings of blacks did not rise faster than the earnings of whites in the 1950s, they did not decline as might be expected if the achievements of the 1940s had simply been a wartime phenomenon.

The 1950s also underscore the point that earnings ratios are measures of *relative* economic success and do not necessarily reveal changes in absolute levels of success. Although relative gains were negligible during the 1950s, they were years of rapid gain in real earnings for blacks as well as whites (see table 1.1). The opposite is observed in the 1970s when the relative earnings of blacks increased, but only because real white earnings barely increased at all, and even fell among men aged 25–34. Black earnings grew more slowly in the 1970s than in any other decade, and the gains were negligible for men aged 25–34.

Is Black Earnings Growth a Statistical Illusion?

One possible explanation for the narrowing of the black-white earnings gap is that it is largely a statistical artifact resulting from selective attrition from the black labor force. As discussed in chapter 2, labor force participation has been falling in recent decades among all groups of working-age men, but especially among blacks. If those who leave the work force have relatively low potential earnings, the earnings of the remaining work force would rise as low wage earners are siphoned off. In view of the relatively large decline in black employment, this effect is potentially greater for blacks than for whites, which would cause an illusory narrowing of the earnings gap. Empirical research suggests, however, that this bias cannot, in fact, account for most of the growth in relative earnings of black males.[8]

Distinguishing Fluctuations and Trends

In analyzing data from the decennial censuses, the question arises whether measured changes in earnings from decade to decade are accurate indicators of long term trends in labor market conditions or instead reflect episodic business cycle conditions. The distinction is important because the effects of changes in business conditions on labor market performance may not be the same for blacks as for whites. Analyses by Walter Oi (1962) and others indicate that workers with little schooling and training are more likely to be laid off during cyclical downturns than more highly educated and skilled workers. As black workers are more often less educated and less skilled than whites, employment fluctuations are likely to be larger among blacks than whites. Consequently, the annual earnings of blacks can vary more than the earnings of whites over the business cycle, and this would affect relative earnings.

Figure 1.1 shows the pattern of unemployment rates by year. Only the aggregate unemployment rate for the total labor force is available for the years from 1939 to 1947. Unemployment data by race and sex are available starting in 1948 and are shown for men in figure 1.2. The aggregate unemployment rate series and the separate series by race follow the same basic pattern during the 1948–1985 period. However, the pattern for black and white males differs in two important respects. First, in every year the black unemployment rate is substantially higher than the white rate, and second, the gap tends to widen as economic conditions worsen.

The years for which earnings are reported in the decennial censuses fall in different stages in the business cycle. (The years in question are the calendar year preceding the census year. For example, the 1980 census contains earnings data for 1979.) In 1939 unemployment had fallen from its Great Depression peak but was still very high. Although 1949 was a recession year, it was mild compared to the 1930s depression. Thus, a comparison of 1939 and 1949 partly reflects the Nation's emergence from the depression.

By contrast, in 1969, which fell at the end of a high growth period, unemployment was exceptionally low. Comparisons of data from 1969 and 1959, when unemployment was relatively high, most likely overstate true long term economic gains. Comparisons of data from 1969 with 1979, when unemployment was somewhat higher, most likely reflect some weakening in the economy. Since the level of unemployment was almost the same in 1949

[7] Tabulations from the public use sample of the 1950 census show that in 1950 among 25–29 year-old men, 55 percent of blacks and 77 percent of whites were veterans of World War II.

[8] The relevant research on this subject is discussed in chap. 7.

FIGURE 1.1

Civilian Unemployment Rate, 1939-1985

FIGURE 1.2

Male Civilian Unemployment Rate by Race, 1948-1985

Source: *The Employment and Training Report of the President, 1982. Handbook of Labor Statistics, 1983.* Bureau of Labor Statistics Data.

and 1959, comparisons of data from these years will be relatively free of business cycle effects.

The unemployment patterns described above apply generally to both black and white men. However, it is apparent in figure 1.2 that the cyclical swings are much more pronounced for blacks. Thus, the decline in unemployment during the 1960s was relatively sharp for blacks, while the series of recessions in the 1970s elevated the unemployment of blacks more than of whites, resulting in a widening of the racial differential in unemployment.

Annual Changes in Relative Earnings

Differential patterns of employment notwithstanding, the large gains in the relative earnings of black men do not appear to be an accident of the particular years in which decennial censuses were taken. Figure 1.3 traces relative earnings for each year from 1948 to 1984. Relative earnings in this case are measured by the ratio of the mean total income of nonwhite men to that of white men, as reported in the annual Current Population Surveys (CPS). Although Census and CPS data are not strictly comparable, the basic decade by decade patterns from the CPS are quite similar to those indicated by the census data for the same period.[9]

Figure 1.3 also shows the annual black-white earnings ratios for those who were full-time year-round workers. This ratio is always higher than the ratio calculated for all men (including those who experience unemployment) because unemployment rates are higher among blacks than whites. Moreover, during the 1970s and early 1980s the two ratios diverged as the series for all men reflected the dampening effect of rising black male unemployment.[10]

Earnings Inequality

The difference in average earnings between black and white men narrowed substantially during the 1940–1980 period. These statistics, however, do not show if earnings gains have been experienced equally within the black male population. For example, low-wage black workers may have been "left behind."

Two aspects of black and white earnings distributions are examined here. First, the degree of earnings variation, or inequality, is measured for each race. Of particular interest is whether earnings inequality changed significantly across decades, and if it did, whether the patterns for blacks and whites are similar or different.

Second, black-white differences in earnings are examined at different points in the income distribution. That is, black-white earnings ratios are computed for groups of workers having the same *relative* standing in terms of earnings within their respective races. These comparisons help to characterize the distribution of racial inequality among the working population and to evaluate how uniformly earnings gains by blacks have been distributed across economic strata.

Differences and Trends in Earnings Inequality

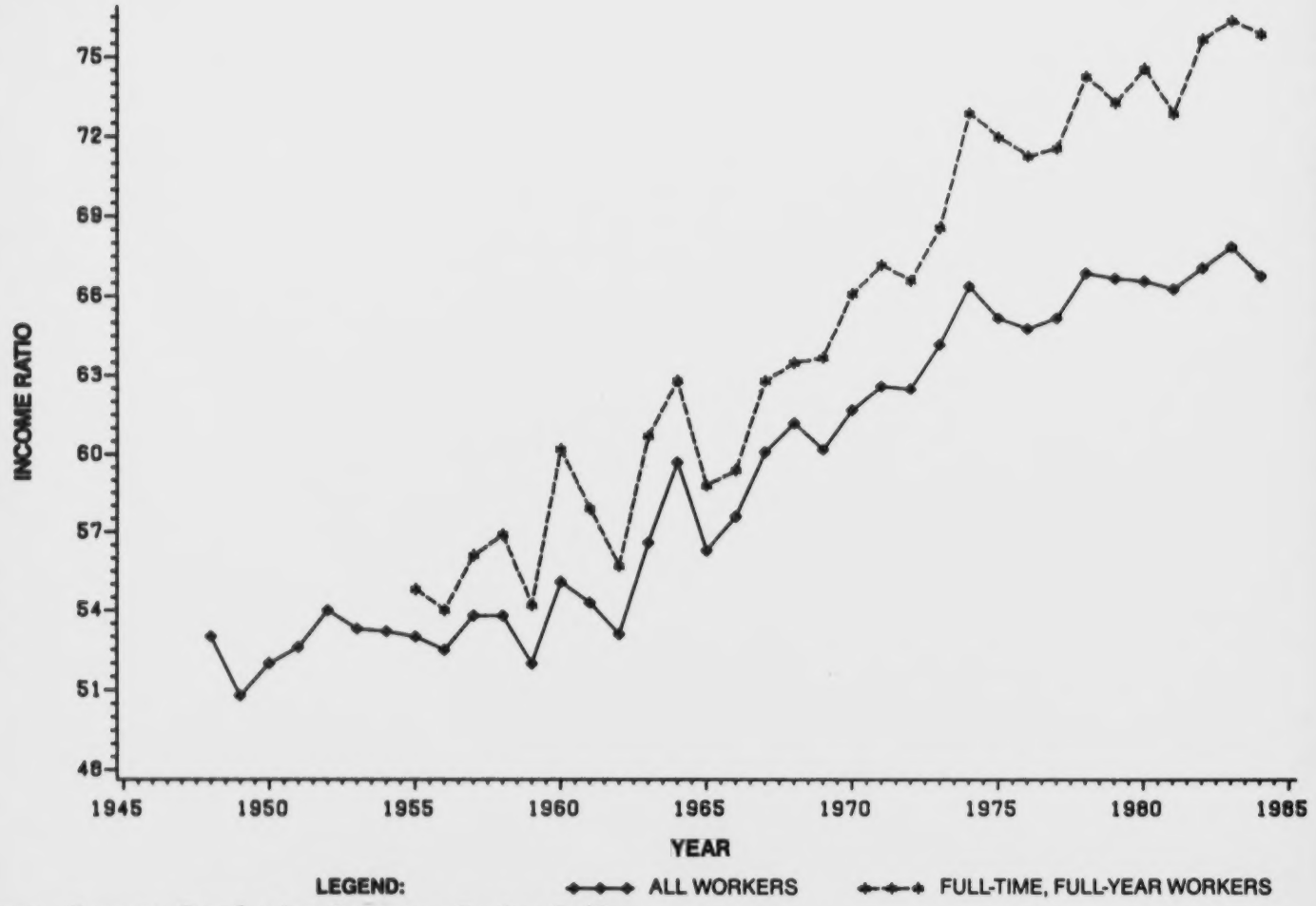
When a group, such as blacks or whites, experiences earnings growth, it is very likely that some members of the group gain more, and others less, than the average. If an individual's gain is correlated with his earnings level, the degree of inequality within the group may increase or decrease. It will decrease if those with lower earnings experience the most rapid growth, and it will increase if their earnings grow at a slower rate than those of higher earners. A widely used measure of dispersion, or inequality, is the standard deviation of the natural logarithm of earnings, which, roughly speaking, indicates the average percentage by which earnings differ from the mean earnings level. Calculations of this statistic are presented in table 1.7 by race and census year. With the exception of 1940, the table shows that earnings inequality is greater among blacks than among whites. Moreover, unlike the trend in average earnings, there does not appear to be any tendency for racial convergence in earnings inequality.

[9] The concepts of income and earnings are not identical, and the CPS sample includes other nonwhites together with blacks. In addition, the CPS is a much smaller sample than the Census and is much more likely to fluctuate due to sample variation.

[10] That the relative economic gains of black males are relatively free of influence from business cycles is also supported by a comparison of annual and hourly earnings ratios derived from census data. Hourly earnings ratios, free of cyclical changes in hours and weeks worked, should exhibit a significantly different pattern if such factors are important. Yet the series are very similar (table 1.6). This test is potentially flawed, however, because hourly wages may themselves fluctuate cyclically. Nevertheless, most of the "cyclical effect" shows up in hours and weeks worked. Moreover, the theoretical relationship between the business cycle and hourly wages is ambiguous. However, one recent study by Bils (1985) finds a negative relationship between unemployment and wages.

FIGURE 1.3

Nonwhite-White Male Income Ratios, 1948-1984



Source: Current Population Reports, Series P-60.

TABLE 1.7

Dispersion of Wage and Salary Earnings by Race (standard deviation of the log of earnings)

	Annual earnings			Weekly earnings		
	Black	White	Difference (black-white)	Black	White	Difference (black-white)
1940	.826	.843	−.017	.717	.700	.017
1950	.781	.720	.061	.663	.597	.066
1960	.871	.711	.160	.726	.581	.145
1970	.790	.688	.102	.695	.604	.091
1980	.929	.794	.135	.800	.691	.109

Note: Tabulations based on wages and salaries of male wage and salary workers ages 25-64 who worked in calendar year. The self-employed and unpaid family workers are excluded.

Source: Census of Population, 1940-1980; Public Use Sample.

The decade to decade changes in annual earnings dispersion for blacks and whites are generally in the same direction. For both races, earnings inequality declined during the 1940s and 1960s and increased during the 1970s. However, during the 1950s this correspondence did not hold, as the earnings dispersion increased sharply for blacks and decreased slightly for whites.

An important factor influencing the dispersion of earnings is unemployment, which generally falls more heavily on low-skilled, low-wage workers, thereby increasing the degree of inequality. Weekly earnings are less affected by unemployment and thus less dispersed than annual earnings. Since blacks typically experience more unemployment than whites, the reduction in earnings dispersion going from annual to weekly earnings is typically greater for blacks than for whites.

Similarly, the decade to decade changes in earnings dispersion seem to be closely related to fluctuations in unemployment generated by the business cycle. The substantial rise in earnings inequality during the 1970s for both blacks and whites in part reflects higher unemployment in 1979 than in 1969. The greater relative increase in unemployment for blacks than for whites helps explain the greater rise in earnings inequality for blacks during the 1970s, and in the 1950s as well.

The greater inequality in earnings among blacks than whites could be due to racial differences in the way schooling, region, and other factors are distributed within the two populations. For example, educational levels may differ more widely among blacks than whites, thereby contributing to racial differences in earnings dispersion. Similarly, regional differences in wage levels can induce dispersion of earnings in the population as a whole.

It is difficult to adjust measures of earnings inequality for all of the relevant characteristics. An attempt to examine the effect of adjusting for two characteristics is shown in table 1.8, which provides measures of weekly earnings dispersion for blacks and whites within detailed schooling groups and separately for the South and the rest of the Nation. The dispersion of earnings is usually lower within the more homogeneous region-schooling groups than it is overall, and this is the case for both blacks and whites. The reduction is generally greater for blacks, and as a result, the differential in the measure of dispersion is considerably smaller within detailed education-region groups. Even within the detailed schooling and region groups, however, the dispersion in earnings generally remains greater for blacks than for whites in 1960 and 1980, although the reverse is true for 1940.

In the United States, as a whole, the black-white differential in earnings inequality converged somewhat between 1960 and 1980, whereas the opposite is true within regions and most region-education groups. This indicates that factors (such as regional developments) that may have been narrowing over-

TABLE 1.8

Dispersion of Weekly Earnings by Race, Education, and Region (standard deviation of the log of earnings)

Region and years of school	1940 Blk.	1940 Wht.	1940 Diff.	1960 Blk.	1960 Wht.	1960 Diff.	1980 Blk.	1980 Wht.	1980 Diff.
Non-South									
0-7	.601	.619	−.018	.661	.589	.072	.879	.793	.085
8-11	.533	.619	−.086	.555	.499	.056	.804	.707	.098
12	.572	.630	−.058	.527	.465	.062	.764	.619	.145
13-15	.718	.661	.058	.508	.524	−.016	.684	.616	.068
16	.525[a]	.841	−.316	.416	.576	−.160	.641	.661	−.020
17+	.491[b]	.891	−.400	.480	.630	−.150	.652	.684	−.033
All groups	.580	.667	−.086	.586	.542	.044	.770	.677	.093
South									
0-7	.687	.749	−.063	.767	.715	.052	.828	.803	.025
8-11	.599	.698	−.098	.662	.585	.077	.823	.731	.092
12	.689	.668	.021	.541	.512	.028	.762	.639	.123
13-15	.597	.705	−.108	.612	.579	.033	.742	.655	.087
16	.626	.725	−.099	.614	.561	.053	.630	.652	−.022
17+	.859[b]	.926	−.068	.468	.584	−.117	.741	.701	.041
All groups	.689	.781	−.092	.741	.660	.081	.806	.717	.089
U.S.									
All groups	.717	.700	.017	.726	.581	.145	.800	.691	.109

[a]Fewer than 100 observations.
[b]Fewer than 50 observations.

Note: Tabulations based on wages and salaries of male wage and salary workers ages 25-64 who worked in calendar year. The self-employed and unpaid family workers are excluded.

Source: Census of Population, 1940-1980; Public Use Sample.

all racial differences in inequality masked other developments that were increasing inequality.[11] Changes in the composition of workers by age, more detailed geographic areas, and industry are among the possible causes of the pattern.

Relative Earnings Gains for High and Low Earners

This section compares the earnings of blacks and whites who hold the same relative earnings position within their respective groups. For example, the earnings of the black man who earns more income than only 10 percent of his fellow blacks are compared with the earnings of the white man who earns more than only 10 percent of his fellow whites. Matching of blacks and whites by earnings rank provides a way to characterize the distribution of racial earnings inequality in the working population. The following questions are addressed: (1) How does the black-white earnings ratio vary at different points of the earnings distribution—e.g., at the 10th, 50th (the median), and 90th percentiles? (2) Has the earnings ratio increased at the lowest percentiles as much as it has at the middle or top percentiles?[12]

Figure 1.4 shows the black-white annual earnings ratio at different percentiles of the income distribution between 1940 and 1980. In each year, except for 1940, the earnings ratios are considerably higher at the higher percentiles than they are at the lower percentiles. Another striking feature of figure 1.4 is that the earnings ratio curves have shifted upward over time. This shift indicates that blacks have progressed, relative to whites, at each percentile of the earnings distribution. This progress appears to have been uneven because certain portions of the curves have shifted up much more than others. More precise measures of these patterns are reported in table 1.9.

Examining the change over the entire 40-year period reveals that relative black annual earnings at or above the 25th percentile have increased by a substantial and remarkably uniform amount. At the 10th percentile, however, relative black earnings have grown very little. Thus, blacks at or above the 25th percentile have made rapid gains relative to whites over the period in terms of annual earnings, while blacks at the very lowest end of the distribution appear to have progressed little.

This pattern varies from decade to decade, and there is an indication that the business cycle is one factor influencing the pattern. Thus, during the 1960s, the largest relative earnings gain was made by blacks at the lower percentiles—the 10th and 25th. The 1960s saw sharply falling unemployment, which seems to have had disproportionately positive effects on blacks with lower earnings. During the 1970s, the situation was reversed. Unemployment rose, more for blacks than for whites, which may explain why relative earnings growth was lower (or even negative) for those at the lowest percentiles.

Black-white ratios of *weekly* rather than *annual* earnings adjust partially for unemployment, since they control for weeks worked. As shown in table 1.9, such ratios of weekly earnings reveal more uniform changes from decade to decade at the different percentiles than do the ratios of annual earnings. In fact, between 1970 and 1980, the adjustment for weeks seems to explain fully the poor performance at the 10th percentile of the black-white ratio of annual earnings. On the other hand, the pattern of declining ratios from 1950 to 1960 remains about the same whether annual or weekly ratios are observed. Thus, although important, it is unlikely that unemployment fluctuations are the only explanation for the unevenness of progress among percentiles over time.

In sum, this brief analysis shows that earnings are generally more unequally distributed among blacks. Related to this finding is the observation that the ratio of black to white earnings is lower at the 10th percentile than it is at the median or at higher percentiles. Moreover, unlike trends in average earnings, there does not appear to be any tendency for convergence in racial differences in earnings inequality.

Concluding Comments

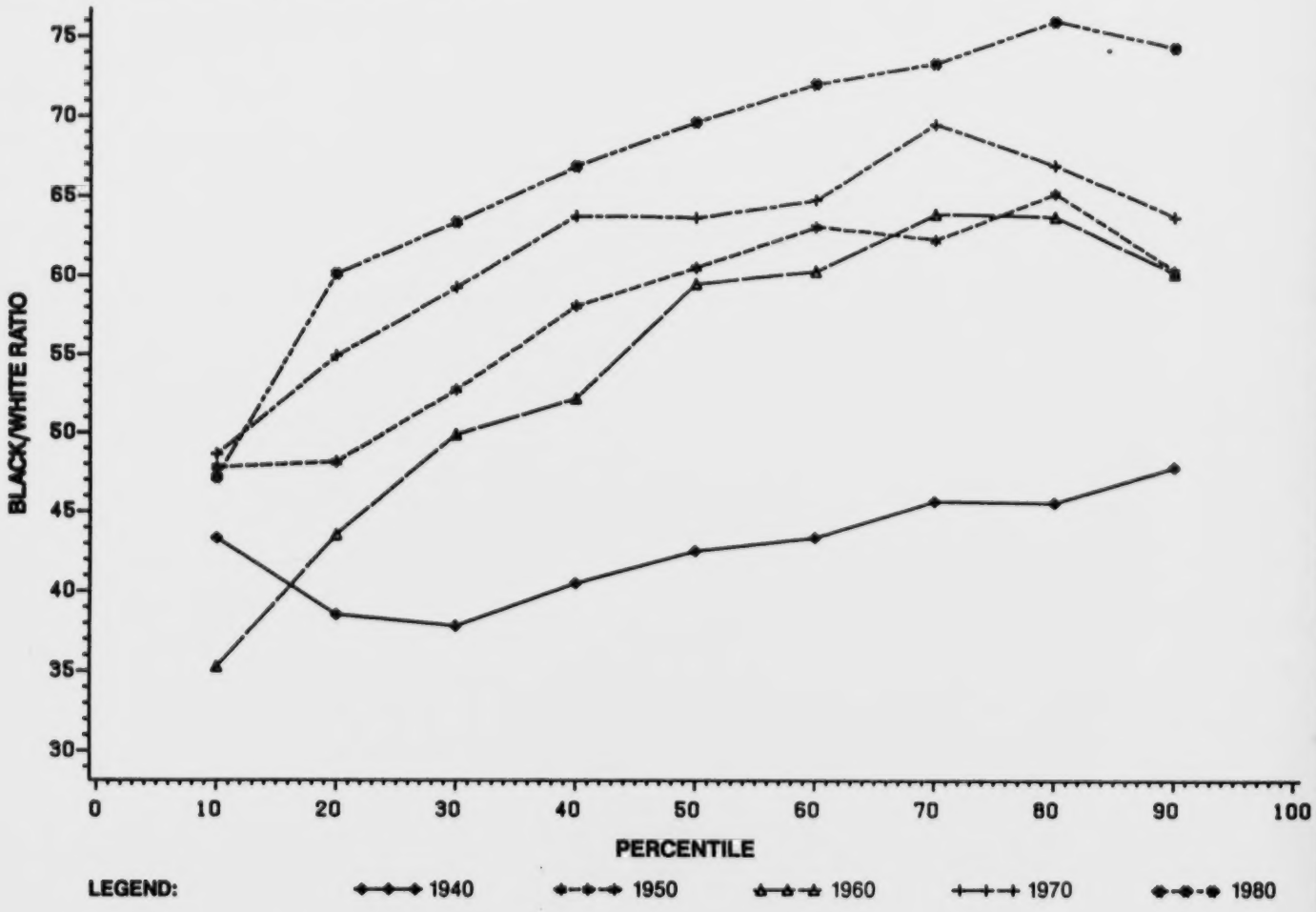
This chapter has presented a broad overview of trends in the earnings of black and white men. Between 1940 and 1980 substantial progress was

[11] The dispersion of earnings of both blacks and whites is substantially greater in the South than in the non-South in 1940 and 1960. The greater concentration of blacks in the South, therefore, would have generated greater inequality for blacks overall. In 1980 the regional effect was considerably smaller and would not have been a major factor causing greater inequality of black earnings.

[12] The pth percentile corresponds to the earnings level below which p percent of the group is found. For example, the 10th percentile is the earnings level below which 10 percent of the group (black or white) earns. The 90th is a higher level of earnings, below which 90 percent of the group earns.

FIGURE 1.4

Black-White Annual Earnings Ratios, Ages 25-64



Source: *Census of Population, Public Use Samples 1940-1980.*

TABLE 1.9

Change in Black-White Earnings Ratios for Men (percentage point changes)

Annual earnings	10th	25th	50th	75th	90th
1940-50	+ 4.5	+14.6	+18.0	+18.9	+12.5
1950-60	−12.5	− 4.1	− 1.0	− 0.7	− 0.1
1960-70	+13.3	+11.0	+ 4.1	+ 5.7	+ 3.5
1970-80	− 1.4	+ 3.8	+ 6.0	+ 7.4	+10.7
1940-60	− 8.0	+10.5	+17.0	+18.2	+12.4
1960-80	+11.9	+14.8	+10.1	+13.1	+14.2
1940-80	+ 3.9	+25.3	+27.1	+31.3	+26.6
Weekly Earnings					
1940-50	+11.9	+15.0	+18.3	+17.1	+16.5
1950-60	−11.5	− 5.8	− 3.3	− 1.5	+ 0.8
1960-70	+11.8	+10.1	+ 7.5	+ 0.8	− 0.7
1970-80	+ 9.0	+ 6.5	+ 4.0	+ 8.7	+11.0
1940-60	+ 0.4	+ 9.2	+15.0	+15.6	+17.3
1960-80	+20.8	+16.6	+11.5	+ 9.5	+10.3
1940-80	+21.2	+25.8	+26.5	+25.1	+27.6

Note: Tabulations based on wages and salaries of male wage and salary workers ages 25-64 who worked in calendar year. The self-employed and unpaid family workers are excluded.

Source: Census of Population, 1940-1980; Public Use Sample.

made in narrowing the black-white earnings gap. The decade to decade pattern of convergence in the earnings gap was uneven, and it did not always parallel the underlying trend in the real earnings growth of blacks. For example, although the 1950–1960 decade was the only one studied in which black earnings gains did not outpace those of whites, it was also a period when the real earnings of the average black male increased substantially—by 3.4 percent a year. This increase just was not as rapid as that of whites, for whom the fifties were the best decade between 1940 and 1980. Conversely, racial differences in earnings continued to narrow during the 1970s, but this was a period of economic stagnation, and the real earnings of black men increased more slowly than in any other decade examined. Only during the 1940s and the 1960s, decades of strong economic growth, did blacks experience substantial gains in earnings both in relative and absolute terms.

There is no simple explanation for the substantial rise in the relative earnings of blacks over the 1940–1980 period. Although Federal civil rights policies undoubtedly played a role, their effect was largely confined to the 1960–1980 period. A complex set of economic, political, and social forces was involved in narrowing the black-white earnings differential. Identifying and evaluating these forces is the primary objective of this report.

Although trends in earnings are typically analyzed by examining the mean or median earnings, such measures overlook potentially important differences in the way earnings are distributed among blacks and among whites. Consequently, the second part of this chapter looks at the distribution of earnings within each race and also examines the black-white earnings ratio at different percentiles in the earnings distribution. With the exception of 1940, black earnings have been more unequally distributed than white earnings. Black earnings inequality increased relative to that of whites between 1940 and 1960, but since 1960 there has been no clear trend in relative inequality. The relatively high unemployment of black men and the greater sensitivity of their employment to the business cycle explain some of the difference in inequality between blacks and whites as well as the pattern of this difference from decade to decade.

When black-white earnings ratios are compared for blacks and whites at the same percentile earnings rank, racial differences are greatest among those with low rank. At higher earnings percentiles, racial differences are substantially smaller. During the 1940–1980 period, black-white earnings ratios generally rose at all percentiles. However, blacks at the lowest percentile ranks did not keep pace during the 1970s due, in part, to rising unemployment rates, which had a disproportionately large effect on blacks with low earnings. The next chapter investigates patterns and trends in employment and unemployment in greater detail.

Chapter 2

Trends in Employment and Unemployment

The preceding chapter documented the great economic progress made by black men between 1940 and 1980 as their earnings rose rapidly, substantially outpacing the gains made by whites. Yet, some troubling signs were evident in the fact that the black male unemployment rate remained considerably higher than the white rate.

This chapter focuses on racial differences in work activity. It reports that a greater fraction of black men than white men are not in the labor force and that blacks generally work fewer hours and weeks during a year. Furthermore, these disparities have shown no sign of narrowing over the past four decades. In light of the apparent earnings gains by blacks during this period, the persistence of differences in work activity is surprising. Generally, when earnings and employment opportunities improve, individuals work more. The question then arises whether particular changes in the economy actually served to limit the employment opportunities of black men or whether factors on the supply side (for example, health or transfer payments) affected black male work patterns.

The discussion below examines several dimensions of work activity, including labor force participation rates, unemployment rates, and weeks and hours worked by the working population.

Measures of Current Labor Force Status

As a rule, official labor force statistics classify individuals as either employed, unemployed, or out of the labor force. Employed persons are defined to include individuals who were at work during the week the survey was taken, regardless of the number of hours worked.[1] Unemployed individuals are defined to include persons not at work but actively searching for a job.[2] The labor force, in turn, consists of persons who are either employed or unemployed. Those who are neither at work nor unemployed are considered to be out of the labor force. This last group may have particular impairments making it difficult to work, or they may have decided, given the type of jobs or pay available, that their time is better spent in other activities such as attending school, working in the home (not for pay), or simply at leisure. The line between being unemployed and being out of the labor force is sometimes

[1] Members of the armed forces are counted among the employed in all tabulations presented in the section.

[2] There have been some changes in the wording of unemployment questions in the censuses over the decades. In the 1960–1980 surveys, for example, the survey sought information about whether an individual looked for work in the previous 4 weeks. In the 1940 and 1950 surveys, however, the job search reference period was not explicitly defined. It is possible that respondents inferred a one-week reference period due to the question's position in a sequence that referred to work activities in the previous week.

In 1940 Census Bureau tabulations counted persons working on emergency public works projects among the unemployed. These individuals are coded separately in available microdata and for the purpose of current tabulations are counted as employed. This maintains consistency with the treatment of workers on government projects in later censuses and affects only about one percent of the labor force. More specifically, if workers on emergency public works projects are counted as employed, the unemployment rate for males is 9.7 percent. If they are counted as unemployed, the overall rate for males is 10.8 percent.

thin, since in periods of high unemployment some workers, termed "discouraged workers," may stop actively searching for work for a time because they believe none is available; they would then be counted as out of the labor force.

The concepts of labor force and unemployment can be summarized in two basic measures of current labor force status: the labor force participation rate, which reflects the share of the population who are in the labor force, and the unemployment rate, which reflects the percentage of the labor force not working.

Labor Force Participation

In 1940 there were only small racial differences in labor force participation among working age men (table 2.1). White male participation rates were stable between 1940 and 1960 and inched down between 1960 and 1980 for those aged 25–54. Among older white workers, however, labor force participation declined more significantly, falling by nearly 20 percentage points for 60–64 year olds between 1940 and 1980. This reflects the trend toward early retirement.

Stronger and more pervasive downward trends are observed for blacks, whose labor force participation rates declined in most decades and at all ages. The declines were initially modest, but tended to accelerate over successive decades. For example, among black 35–44 year olds, the participation rate fell 2 percentage points between 1940 and 1960 and another 5.4 points by 1980. Similar to whites, the declines in participation were largest among older persons, falling nearly 29 percentage points over the 40-year period for 60–64 year-old black men.

As a result of these trends, racial differences in labor force participation have increased substantially over time. While the labor force participation rate of black men ages 35–44 was 1.5 percentage points below that of white men in 1940, the differential had widened to almost 8 percentage points by 1980.

The decline in labor force participation has also been concentrated among persons with less schooling (tables 2.2 and 2.3). Although both races exhibit this pattern, the decline within education groups is again more pronounced for blacks. Table 2.4 summarizes these trends for the age groups 25–34 and 45–54 years.

Why, during a period of rising relative wages and expanding civil rights programs would greater numbers of men, particularly black men, withdraw from the labor market? Various explanations for this apparent paradox have been offered.

One argument is that the economy has been generating fewer employment opportunities overall, or for certain groups of workers, as a result of changes in its industrial structure. These changes have been attributed to forces such as automation or foreign competition.[3]

Another hypothesis is that workers have been induced to leave the labor force as a result of rising benefits from activities other than work. It is argued that during the past 40 years increasing numbers of individuals have gained access to alternative sources of income such as government transfer payments as well as to illegal or "underground" activities. Clearly, when opportunities for obtaining nonmarket income increase, the incentive to work in the market is weakened, particularly among those whose work prospects are poor to begin with. Thus, blacks, whose earnings are more likely to be low, would be affected more than whites. This section examines the evidence for these different explanations.

Have Employment Opportunities Declined?

The decline in labor force participation described above is sometimes attributed to shrinking employment opportunities. The empirical validity of this hypothesis is questionable, however, in view of the fact that the economy generated more jobs, not fewer, over the period of labor force decline. In 1960, 54.9 percent of the population aged 16 and over was employed, and this ratio rose to 56.1 percent in 1970 and 58.5 percent in 1980. This increase, admittedly, was driven by a rise in the proportion of women and teenagers who were working. Thus, it is possible that the overall rise in employment masked worsening opportunities for men, resulting in their displacement from jobs. This displacement would cause a decline in labor force participation if unemployed workers eventually become so pessimistic about the prospect of finding a

[3] The argument that automation was displacing workers and causing "structural" unemployment was promoted by Killingsworth in the mid-1960s (see Killingsworth, 1965) but countered by other economists, who saw the problem of the day as lack of aggregate demand (see Council of Economic Advisers, 1964). For a more recent discourse on the subject of job displacement caused by "deindustrialization," see Bluestone and Harrison (1982). But see the analysis by Kosters (1986) suggesting that the importance of job displacement has been greatly exaggerated.

TABLE 2.1

Male Civilian Labor Force Participation Rates by Race and Age

Race and age	1940	1950	1960	1970	1980
Blacks:					
25-34	96.0	91.0	93.4	91.4	87.8
35-44	95.3	94.5	93.3	91.2	87.9
45-54	92.3	91.9	90.1	86.4	82.3
55-59	90.8	83.5	82.9	79.5	70.1
60-64	83.8	74.2	70.0	66.6	54.9
Total	93.9	91.2	89.9	86.7	82.5
Whites:					
25-34	97.2	94.6	96.7	95.8	95.0
35-44	96.8	97.0	97.2	96.5	95.8
45-54	94.0	94.2	95.1	94.2	91.7
55-59	89.6	87.7	89.7	88.5	82.2
60-64	80.9	80.0	80.0	74.9	61.1
Total	94.4	93.6	94.3	92.8	90.0
Difference in participation (white minus black):					
25-34	1.2	3.6	3.3	4.4	7.2
35-44	1.5	2.5	3.9	5.3	7.9
45-54	1.7	2.3	5.0	7.8	9.4
55-59	−1.2	4.2	6.8	9.0	12.1
60-64	−2.9	5.8	10.0	8.3	6.2
Total	0.5	2.4	4.4	6.1	7.5

Source: Census of Population, 1940-1980; Public Use Sample.

TABLE 2.2

Black Male Civilian Labor Force Participation Rates by Age and Education

Age and years of school	1940	1950	1960	1970	1980
25-34					
0-11 yrs.	95.9	92.1	93.1	89.0	81.2
12-15	95.6	86.0	93.8	94.0	89.6
16+	96.7	89.6*	95.5	91.3	92.7
35-44					
0-11	95.3	94.6	92.5	89.4	82.3
12-15	95.6	93.4	95.7	93.6	90.7
16+	96.9	95.6*	98.0	97.4	94.4
45-54					
0-11	92.2	91.9	89.6	84.3	77.7
12-15	94.4	91.1	92.6	92.2	87.2
16+	94.8	95.1	96.6	95.7	93.6
55-64					
0-11	87.5	82.6	76.6	72.2	59.1
12-15	95.3	80.7*	87.1	81.0	71.8
16+	89.1	92.9*	88.1	92.0	81.8
Total					
0-11	93.8	91.4	88.8	83.6	74.2
12-15	95.7	88.5	93.7	92.6	88.0
16+	95.8	93.2	95.8	94.2	92.3

*Less than 100 observations per cell.

Source: Census of Population, 1940-1980; Public Use Sample.

TABLE 2.3

White Male Civilian Labor Force Participation Rates by Age and Education

Age and years of school	1940	1950	1960	1970	1980
25-34					
0-11 yrs.	97.2	95.5	96.0	93.8	89.9
12-15	97.6	94.3	97.4	96.9	95.8
16+	95.6	91.6	96.6	95.3	95.7
35-44					
0-11	96.5	96.5	95.8	94.1	90.7
12-15	97.5	97.9	98.4	97.6	96.7
16+	98.1	98.0	98.9	98.5	98.1
45-54					
0-11	93.6	93.4	93.9	91.4	85.9
12-15	95.5	95.9	97.0	95.9	93.3
16+	95.9	96.5	97.8	97.8	96.8
55-64					
0-11	85.2	84.8	83.8	78.5	65.3
12-15	87.5	88.8	88.5	87.1	75.3
16+	90.0	89.8	92.5	89.9	84.3
Total					
0-11	93.8	92.8	92.2	88.5	80.8
12-15	96.2	95.0	96.7	95.4	92.1
16+	95.7	94.3	97.1	96.1	95.1

Source: Census of Population, 1940-1980, Public Use Sample

TABLE 2.4

Changes in Male Labor Force Participation Rates by Years of School, Race, and Age

	1940-1960	1960-1980
Ages 25-34		
Black		
0-11 yrs.	−2.8	−11.9
12-15 yrs.	−1.8	− 4.2
16+ yrs.	−1.2	− 2.8
Total	−2.6	− 5.6
White		
0-11 yrs.	−1.2	− 6.1
12-15 yrs.	−0.2	− 1.6
16+ yrs.	+1.0	− 0.9
Total	−0.5	− 1.7
Ages 45-54		
Black		
0-11 yrs.	−2.6	−11.9
12-15 yrs.	−1.8	− 5.4
16+ yrs.	+1.8	− 3.0
Total	−2.2	− 7.8
White		
0-11 yrs.	+0.3	− 8.0
12-15 yrs.	+1.5	− 3.7
16+ yrs.	+1.9	− 1.0
Total	+1.1	− 4.3

Source: Tables 2.1, 2.2, and 2.3.

job that they cease all job search activity and drop out of the labor market.[4]

If steadily deteriorating job opportunities were the major reason for declining labor force participation, an upward trend in the unemployment of black men would be expected that roughly corresponded to the upward trend in *non*participation in the labor force. In fact, figures 2.1 and 2.2 suggest that while nonparticipation has trended upwards since the mid-1950s, unemployment rates have shown no such corresponding pattern.

For instance, during the 1960s, the black rate of unemployment fell sharply while the black rate of nonparticipation continued to rise steadily. Further, although unemployment increased in the 1970s, labor force nonparticipation rose little after 1975 and even leveled off during the early 1980s. The only periods when the two series do move in the same direction appear to be of short duration, corresponding to the ups and downs of cyclical fluctuations. In sum, the evidence presented in figures 2.1 and 2.2 suggests that diminishing employment opportunities are not likely to have played a significant role in generating the trends in labor force participation.

The Effects of Disability Transfers

In seeking causes of the decline in labor force participation, several authors have focused on the role of disability transfer programs such as social security and supplemental security income.[5] These programs, it is argued, create incentives for the disabled and elderly to reduce the amount that they work. The availability of benefits—a nonwage source of income—would itself tend to discourage work. Furthermore, the social security and SSI disability programs effectively preclude work, since an inability to perform significant work is a condition for program eligibility. Similarly, the social security retirement program limits work through an earnings test which restricts the amount that can be earned without forfeiting benefits.

At its inception social security was a retirement program for workers aged 65 and over. Since then the program has been greatly expanded. Coverage for disabled workers was first extended in 1956 to those aged 50–64 years, and in 1960 it was extended to all ages. In 1961 partial benefits were made available to able-bodied workers choosing to retire early at ages 62–64. Rising benefits also contributed to the expansion of the program. Thus, the annual real benefit received by the average person rose by 5.2 percent from 1960 to 1965, by 14 percent from 1965 to 1970, and by 21 percent from 1970 to 1975 (table 2.5).

During the late 1960s and early 1970s, benefits grew faster than earnings, and as a result, the "replacement rate"—the ratio of the worker's own benefit (the "primary insurance amount") to past earnings—rose as well. For the worker with average earnings, the replacement rate increased from about 33 percent in the 1960s to 51 percent in 1980. These figures typically understate the true extent to which benefits replace earnings, since benefits are not taxed, while earnings are subject to both income and social security tax.[6] Moreover, the primary benefit is supplemented for workers with dependents. One study of disability awards found that the average benefit for workers with dependents replaced 75 percent of prior gross earnings and close to 100 percent of after-tax earnings.[7]

The social security system is more generous to low-wage than to high-wage workers because benefits replace a decreasing share of earnings as earnings rise. Owing to changes in the benefit structure, replacement rates also rose much more among low-wage than high-wage earners. The social security benefits for a disabled low-wage worker replaced 45 percent of earnings in 1960 and 64 percent in 1980. Among high-wage earners, the replacement rate only increased from 30 to 32.5 percent over the same period. The introduction and growth of noncash benefits, such as food stamps and medicaid, in the late 1960s enabled those with low incomes to supplement their benefits.[8] As a result of these factors, the pecuniary incentive to retire on social security disability benefits is greater for low-wage

[4] Surveys show that most displaced workers do, in fact, find jobs. For instance, despite the weakened economy of the early 1980s 69 percent of workers displaced from jobs during the 1979–81 period were employed in January 1984; only 15 percent quit the labor force. See Kosters (1986).

[5] Parsons (1980a, b) and Leonard (1979) have argued that increased benefit levels and coverage in the social security disability program have reduced labor force participation, and disproportionately more so for blacks. For a different view, see Haveman and Wolfe (1984).

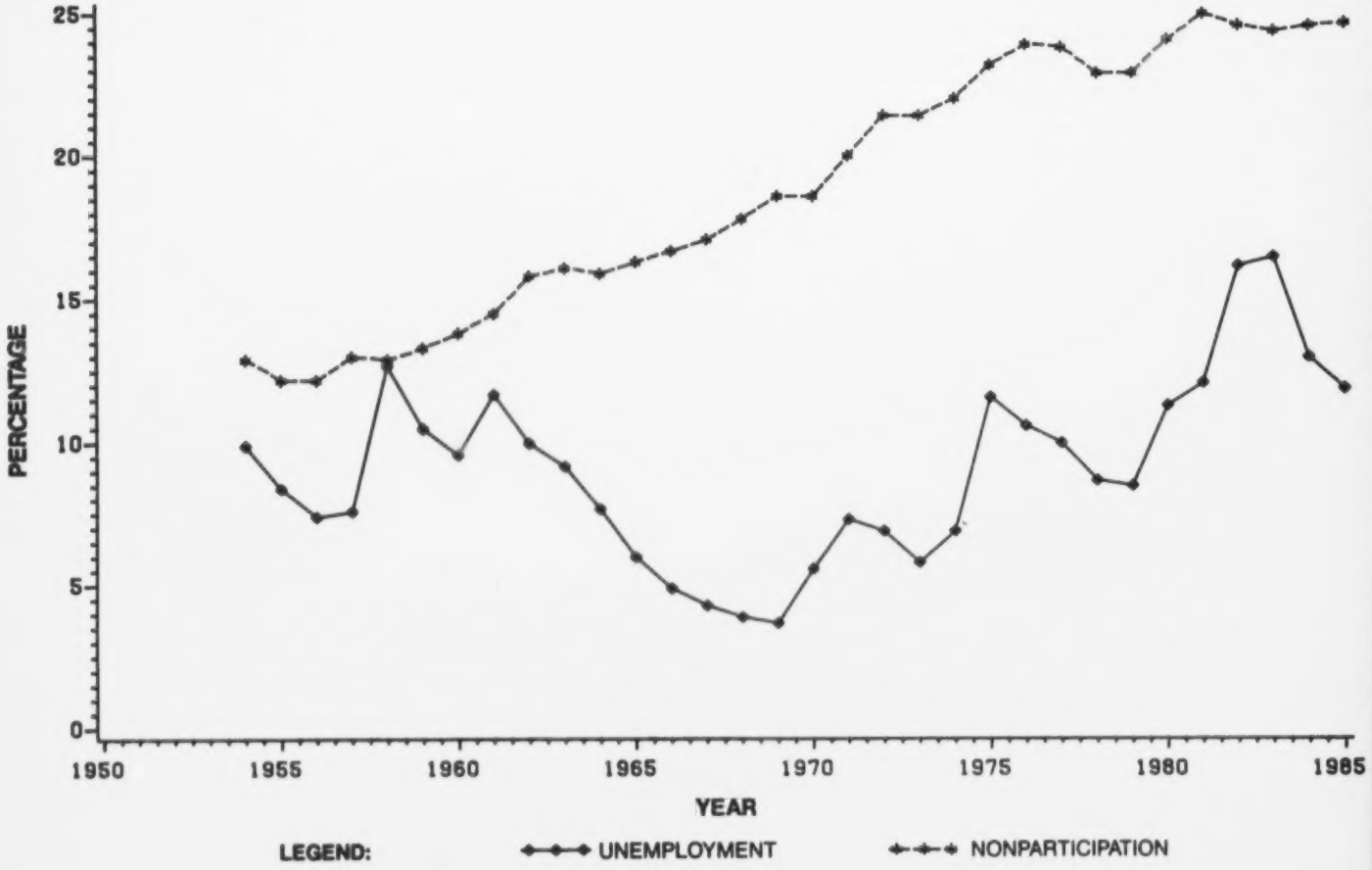
[6] Since 1981 benefits have been subject to income taxation.

[7] These statistics refer to social security benefits awarded to disabled workers in 1976 and are based on an unpublished study of the Congressional Budget Office (April 1979).

[8] The March 1982 Current Population Survey found that among the work disabled, 15 percent of whites and 47 percent of blacks received food stamps and 16 percent of whites and 37 percent of blacks were covered by medicaid.

FIGURE 2.1

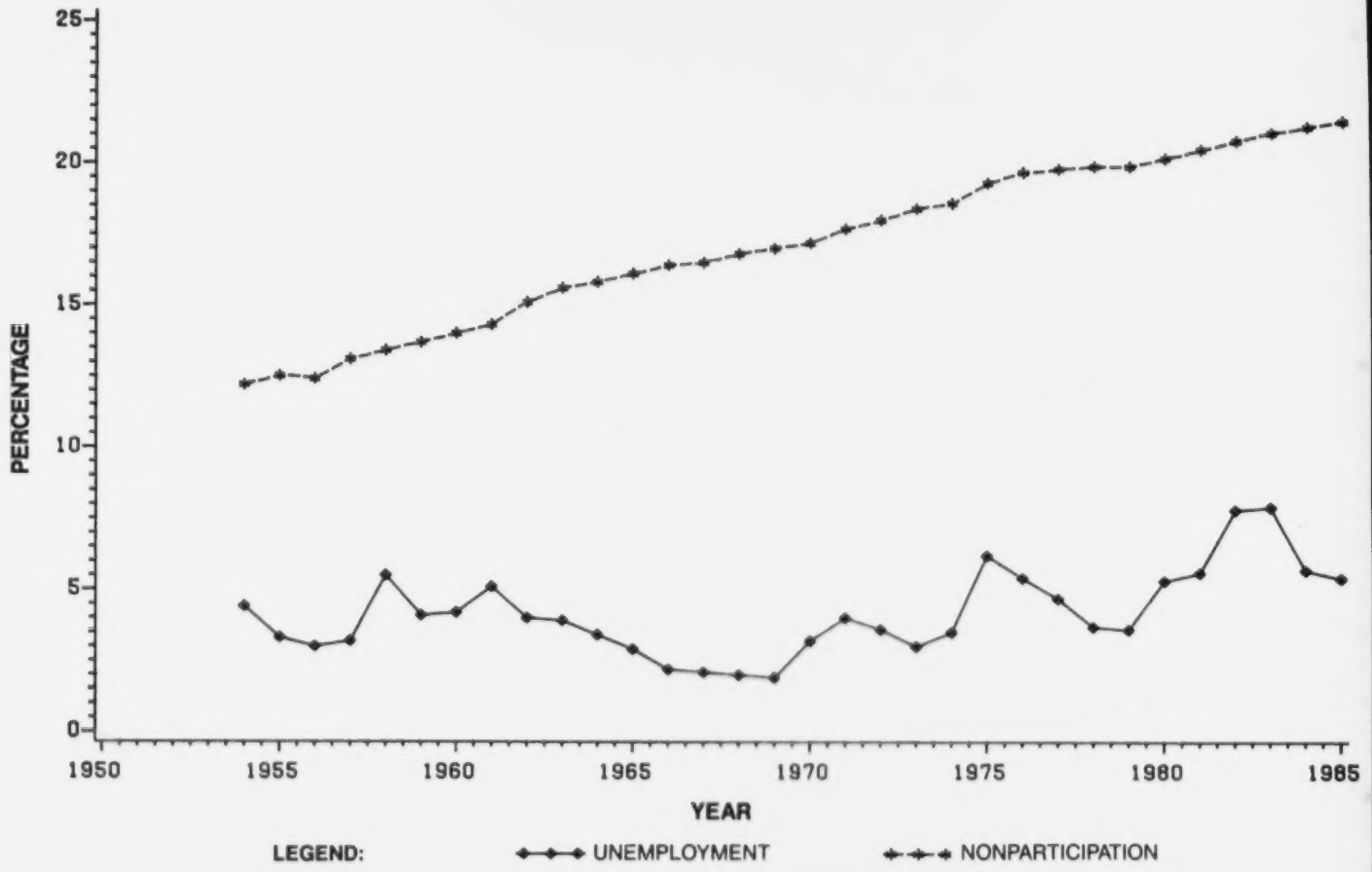
Rates of Civilian Unemployment and Labor Force Nonparticipation for Nonwhite Men Ages 20 and Over, 1954-1985



Source: *Economic Report of the President, 1982* and Bureau of Labor Statistics Data.

FIGURE 2.2

Rates of Civilian Unemployment and Labor Force Nonparticipation for White Men Ages 20 and Over, 1954-1985



Source: *Economic Report of the President* and Bureau of Labor Statistics Data.

TABLE 2.5

Benefits and Replacement Rates in the Social Security Disability and Retirement Programs

Year	Annual benefit[1]			Replacement rate[2]		
	Low earner	Average earner	Maximum earner[3]	Low earner	Average earner	Maximum earner[4]
1955	3,001	4,230	4,583	49.6	34.6	32.8
1960	3,286	4,507	4,583	45.0	33.3	29.8
1965	3,428	4,741	5,207	40.0	31.4	32.9
1970	3,804	5,410	6,098	42.7	34.3	29.2
1975	4,461	6,568	7,675	59.5	42.3	30.1
1980	4,865	7,390	9,375	64.0	51.1	32.5
1983	4,637	6,968	8,934	63.6	45.8	26.3
1984	4,344	6,523	8,461	62.3	42.8	23.7
1985	4,224	6,274	8,207	63.8	41.0	22.9

[1]The benefit is the primary insurance amount (PIA) in the year of entitlement. The annual benefit is the sum of the monthly PIAs and is expressed in 1984 constant dollars.
[2]The annual benefit expressed as a percentage of earnings in the year prior to entitlement.
[3]For the hypothetical worker who earned the social security maximum.

Source: U.S. Congress, House Committee on Ways and Means, 1985.

earners than high-wage earners, and the incentive for low-wage earners grew larger after 1960.

Black men are likely to have greater incentives than white men to retire early on a disability pension because of their lower earnings as well as their higher incidence of disability. Surveys typically find that blacks are more likely to be disabled than whites.[9] Moreover, mortality rates, which are correlated with disability and are free of subjective reporting, are more than twice as high for working-age blacks than for working-age whites.[10] These findings are supported by the fact that black men tend to work in blue-collar occupations whereas white men tend to work in sedentary white-collar occupations.[11] Not only is the risk of injury higher in blue-collar jobs, but because more physical labor is involved, a given injury will generally be more debilitating.

It is not surprising, therefore, that black men of working age are more likely to receive social security benefits than whites. As shown in table 2.6, the proportion of men receiving benefits has in-

[9] For example, the March 1982 Current Population Survey found that about 21 percent of blacks aged 45–54 reported having a disability that prevented them from working or limited the work they could do, compared to 11 percent among whites of the same age. (Current Population Reports, series P-23, no. 127.) Also see the Report of the Secretary's Task Force on Black and Minority Health (U.S. Department of Health and Human Services).

[10] In 1970 the mortality rate among men aged 35–44 was 2.8 times as great for blacks as for whites, and for men 45–54, the black-white mortality ratio was 2.0. The mortality differential by race has narrowed over time, however. (U.S. Bureau of the Census, *Statistical Abstract of the United States*, 1981, table 109.)

[11] In 1970, for example, 61 percent of black men and 46 percent of white men were employed in blue-collar occupations. This disparity has tended to narrow over time. (Census of Population: 1970, Detailed Characteristics, Final Report PC(1)-D1.)

TABLE 2.6

Percentage of the Male Population Receiving Social Security Benefits by Age and Race

Year	Age group 25-34	35-44	45-54	55-59	60-64
Nonwhite men					
1950	0.0	0.0	0.0	0.0	0.0
1960	0.2	0.3	1.3	3.3	6.6
1964	0.3	1.3	2.9	6.1	27.1
1969	1.8	2.1	4.2	8.0	26.8
1972	2.2	2.5	5.2	10.0	29.9
1976	3.6	3.3	6.8	12.9	37.5
1980	1.8	3.2	6.8	12.8	37.7
1983	1.6	2.9	5.6	11.3	39.0
White men					
1950	0.0	0.0	0.0	0.0	0.0
1960	0.2	0.3	0.8	2.2	4.5
1964	0.5	0.9	1.7	3.6	19.4
1969	0.6	1.3	2.4	4.7	21.7
1972	0.8	1.5	3.1	6.0	26.6
1976	1.1	2.0	4.1	8.1	33.5
1980	1.0	2.0	4.2	8.3	35.0
1983	0.9	1.8	3.5	7.3	36.6

Note: Beneficiaries are measured at the end of the year and include all male old age and disability beneficiaries. Population estimates refer to the civilian resident population.

Source: Vroman, 1986.

creased for both blacks and whites, but by much more for blacks at ages 25–59.[12] Furthermore, growth in social security recipience appears to be closely linked to the decline in labor force participation. Among white men (table 2.7), the increase in the number receiving social security potentially accounts for all of the increase in the number out of the labor force at some ages and for a substantial share at other ages.[13] Among black men, growth in social security recipience could account for from half to all of the labor force change at ages 35 and over, although it does not appear to be an important factor among young blacks, 25–34 years of age.

Individuals who actually receive social security disability benefits cannot do significant work if they expect to remain in the program and are, therefore, likely to be classified as out of the labor force. However, the number of recipients understates, by a large measure, the full effect of such programs on labor force participation because it excludes individuals who quit the labor force with the expectation of (and as a prerequisite to) qualifying for benefits. For every recipient, there is an unsuccessful applicant who will spend a considerable amount of time in the application and appeal processes. Moreover, relatively more black men would be in this group because a greater number of blacks have disabilities,

[12] Note that table 2.6 relates to nonwhite men. In view of the large proportion of this group who are black, the text refers to nonwhites as black.

[13] The increase in social security recipients can exceed the increase in nonworking men if some recipients would not have worked even without benefits. Since the participation of this group is likely to have been quite high from the inception of these programs, most of the increase in program participation after 1960 should represent individuals who would have been in the labor force had benefits not been available.

TABLE 2.7

Trends in Nonparticipation in the Labor Force and Social Security Recipiency by Race and Age

Race and age	Change in share of population out of the labor force, 1960-1980 (percentage point change)	Change in share of population receiving social security, 1960-1980 (percentage point change)	Change in social security recipients as percent of change in men out of the labor force, 1960-1980
Black men[1]			
25-34	5.6	1.6	28.5
35-44	5.4	2.9	53.7
45-54	7.8	5.5	70.5
55-59	12.8	9.5	74.2
60-64	15.1	31.1	206.0
White men			
25-34	1.7	0.8	47.1
35-44	1.4	1.7	121.4
45-54	3.4	3.4	100.0
55-59	7.5	6.1	81.3
60-64	18.9	30.5	161.4

Note: Social Security beneficiaries are essentially recipients of disability pensions up to age 62; recipients ages 62-64 include recipients of old age pensions choosing the early retirement option.

[1]Social security data refer to nonwhite men.

Source: Tables 2.1 and 2.6.

and among the disabled, a higher percentage of blacks apply for benefits.[14]

Another way of relating disability and labor force activity is presented in figures 2.3 and 2.4. They show, for each year since 1964, the percentage of black men and white men who did not work during the year, classified by the reason given by the men for not working. The major reasons for not working are disability, retirement, and a perceived lack of employment opportunities ("discouraged workers").

Figure 2.3 shows the rapid rise since 1964 in the proportion of black men aged 25–64 who did not work at all during an entire year. It is apparent that the primary factor underlying this trend through the 1960s and into the mid-1970s is the rising proportion of men who reported not working because of a disability. In 1964, 4 percent of black men (ages 25–64) did not work due to disability; by 1975 this proportion had risen to 10.3 percent (11.5 percent including retirees). Significantly, this was a period when social security benefit levels increased and eligibility standards were relaxed.[15]

Starting in the late 1970s, a series of actions was taken to slow program growth. These actions appear to have met with some success as accessions to the program declined. This is reflected in a leveling off and then a decline in the rate of nonparticipation for reason of disability. The patterns in figure 2.3 also show that discouraged workers—those who cite inability to find work as a reason for nonparticipation—played a very minor role until the recessions of 1975 and 1982.[16]

The broad pattern shown in figure 2.4 for white men is similar to that of black men, although the level and rise in the proportion out of the labor force are considerably smaller for whites. Early retirement is a relatively more important reason for labor force withdrawal among white men than it is among blacks, because the rise in white labor force withdrawal is more concentrated among older men (60–64).

In sum, the data presented here and in other studies support the hypothesis that the decline in labor force participation among men ages 45–64 is due in large measure to the expansion in Federal disability programs and, for those aged 62–64, to early retirement under social security.[17] [18]

A final cautionary comment pertains to judgments that may be formed about the relation between work and disability and retirement transfers. To observe that a program has reduced labor force participation is not necessarily a condemnation of the program. Some individuals, including disabled individuals, who otherwise would have been productive workers may have been induced by transfers to withdraw from the labor force. However, transfers also may have enabled many disabled workers to retire who otherwise would have further impaired their health by continuing to work. A full evaluation of the effects of transfer programs would require a detailed analysis of the health benefits associated with early retirement, a study beyond the scope of this report.

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[14] The initial application process involves a 5-month waiting period during which time any substantial work activity would jeopardize the claim.
In 1981, 70 percent of initial claims were denied; 49 percent of those denied appealed to the State-level agency; State agencies denied 87 percent; 68 percent of these denials appealed to an administrate law judge; of these 58 percent were allowed and 42 percent denied; and so on through to the U.S. district court. In earlier years initial denial rates were closer to 50 percent. (Committee on Ways and Means, 1982, table 4).
Data tabulated by Halpern and Hausman (1985) from the 1972 Survey of Disabled and Non-Disabled Adults (matched with social security records) show that 54 percent of disabled black men had ever applied for disability benefits compared to 37 percent of white men. Of the applicants, approximately the same proportion of black and white men were eventually awarded benefits (57 percent). However, because of their larger proportion of applicants, the black male population would likely have larger proportions of individuals without work activity involved in applying and reapplying for benefits.

[15] During this period the administration of the program accepted an increasing number of applicants who did not meet the strict medical definition of a severe disability but who met nonmedical standards such as inability to perform one's usual work (U.S. Congress, House of Representatives, Committee on Ways and Means, 1985).

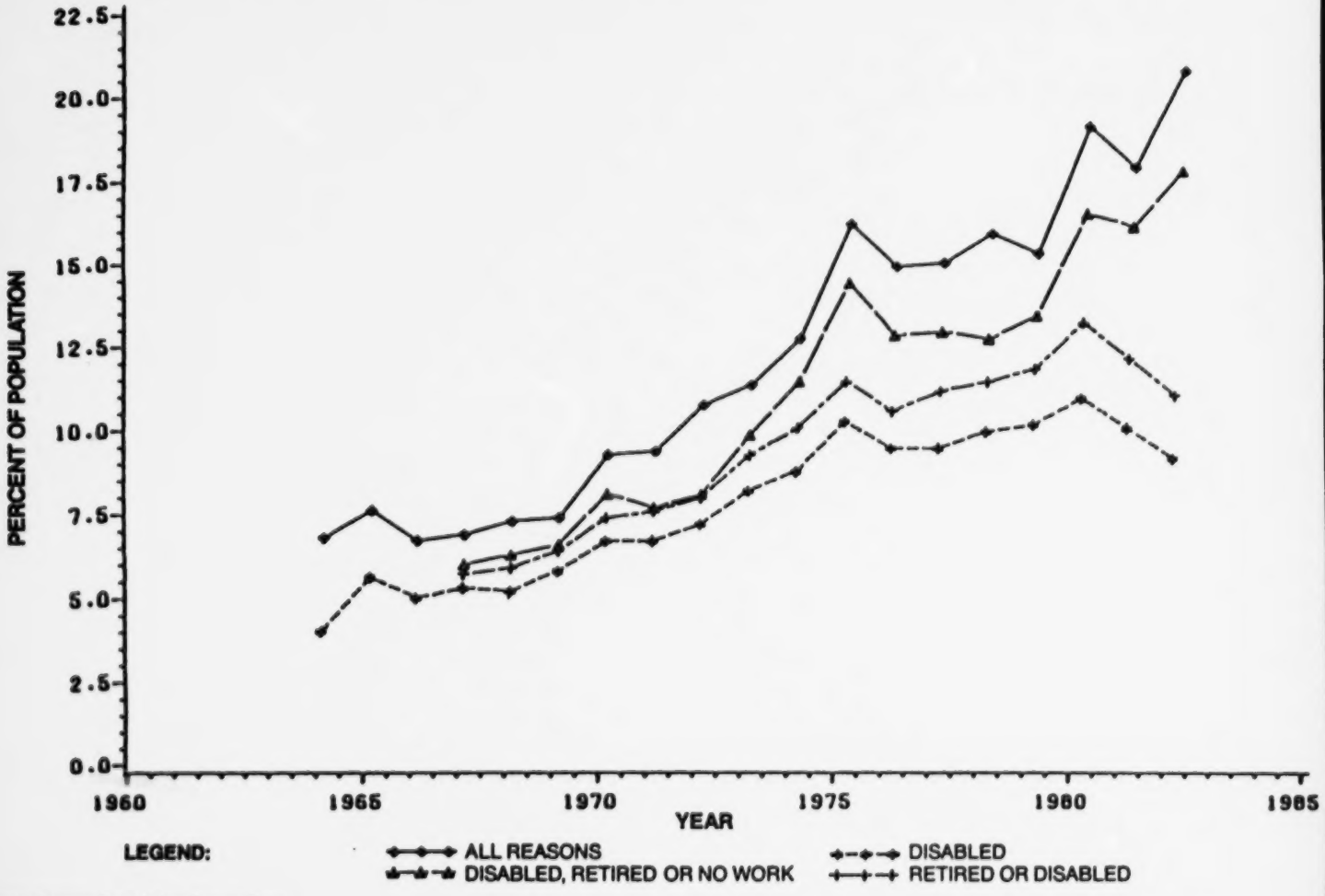
[16] The proportion of the population who cite inability to find work as a reason for nonparticipation (discouraged workers) can be seen in figures 2.3 and 2.4 as the area between the line showing the percentage "Disabled, Retired or Discouraged Worker" and the line showing the percentage "Retired or Disabled Worker." Discouraged workers averaged only 0.5 percent of the population among black men ages 25–64 in the period 1964–1973, but rose to 3 percent of the population in 1975, subsided to 1.3 percent in 1978, and then shot up to 6.8 percent in the 1982 recession.

[17] As noted, see Parsons (1980a, 1980b), and Leonard (1979) and for criticism of Parsons, see Haveman and Wolfe (1984). For a recent analysis which shows that rising levels of disability benefits have a strong effect on benefit applications and, thus, on work participation, see Halpern and Hausman (1985).

[18] The argument that transfer programs have caused falling labor force participation rates does not apply, of course, to the 1940s. Yet, participation rates generally fell during this decade, especially among older black men. A likely cause for this trend was the shift of employment out of agriculture towards manufacturing employment and from rural to urban residence.

FIGURE 2.3

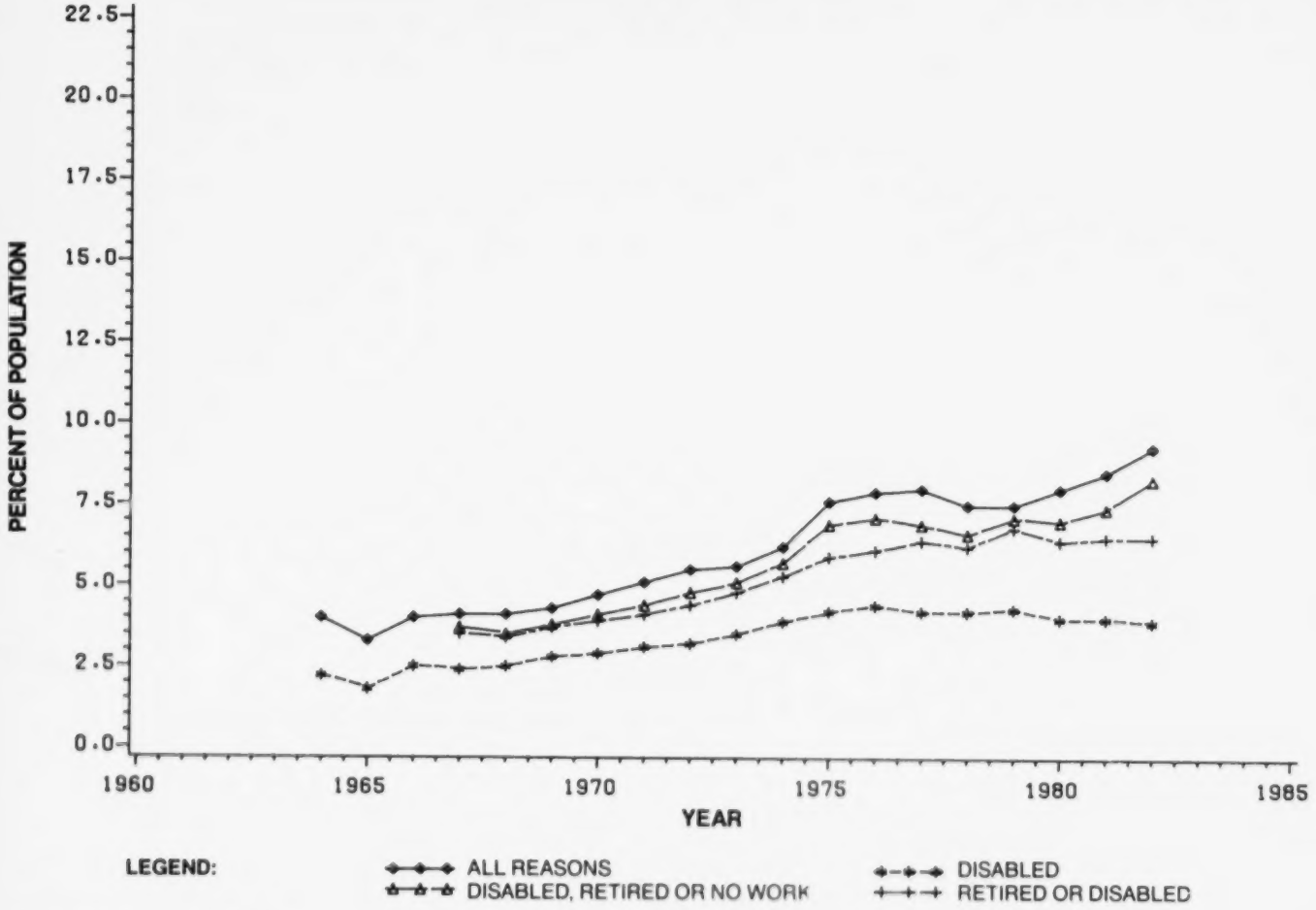
Black Men Ages 25-64 Not at Work in Previous Year by Reason



Source: Current Population Survey Data.

FIGURE 2.4

White Males 25-64 Not at Work in Previous Year by Reason



Source: Current Population Survey Data.

TABLE 2.8

Male Unemployment Rates by Race and Age

	1940	1950	1960	1970	1980
Black					
25-34	10.0	7.3	7.9	4.6	11.3
35-44	9.7	6.4	7.9	4.2	8.1
45-54	9.0	4.9	7.0	4.0	7.5
55-64	9.2	6.5	8.3	3.9	6.1
Total	9.6	6.4	7.8	4.2	9.0
White					
25-34	7.7	3.5	3.7	2.8	5.6
35-44	6.5	3.0	3.2	2.3	3.7
45-54	7.4	3.3	3.8	2.4	3.5
55-64	9.6	4.2	4.7	2.9	3.8
Total	7.6	3.4	3.7	2.6	4.4
Black relative to white unemployment rate					
Ratio	1.3	1.9	2.1	1.6	2.0
Difference	2.0	3.0	4.1	1.6	4.6

Note: Unemployment as a percentage of the civilian labor force.

Source: Census of Population, 1940-1980, Public Use Sample.

Declining Work Participation at Younger Ages

The increase in social security beneficiaries seems to account for little of the decline in labor force participation among young men, ages 25–34 (table 2.7). Participation did not fall as much at these ages as it did at older ages, but the decline is noticeable nonetheless, particularly among men who have not graduated from high school (tables 2.3 and 2.4). Between 1960 and 1980, the participation rate for black men with less than a high school education fell from 93.1 to 81.2 percent; for white men of the same age and education, the decline was from 96 to 89.9 percent. Although a comprehensive analysis is beyond the scope of this report, several forces can be noted that may have contributed to the decline in labor force participation among younger men.

One possibility is that forces in the economy reduced employment opportunities for younger men. Unemployment rates for men 25–34 did rise between 1970 and 1980, and particularly sharply for blacks (see table 2.8). Unemployment, however, is not likely to have influenced the decline in participation during the 1960s, since this was a period of declining unemployment and of rapid economic growth generally. Moreover, more detailed examination of the 1970s using annual data from the Current Population Survey (CPS) shows that the decline in labor force participation among black men 25–34 was largely concentrated in the years 1970–73 which were still a period of relatively low unemployment.[19]

Several other developments are likely to be associated with declining labor force participation

[19] Annual data from the CPS show that the labor force participation rate of nonwhite men ages 25–34 declined from 95.7 percent in 1965 to 94.4 percent in 1969, and from 93.7 percent in 1970 to 91.7 percent in 1973, declining not quite a percentage point to 90.9 percent in 1980. (The figure for 1980 refers to blacks only; for 1973 the black-only figure is 91.8, but only data for all nonwhites are available before 1972.) The pattern of unemployment for this group, however, was a decline from a rate of 6.2 percent in 1965 to 3.4 percent in 1969 (which is not consistent with the declining participation), and a rise in unemployment to 6.1 percent in 1970 (which is consistent with declining participation). Unemployment remained at roughly the 1970 level until 1973 and then fluctuated up and down around a much higher level between 1974 and 1980, when it reached 13.4 percent. Yet the decline in labor force participation was more modest during this high unemployment period.

among younger men and particularly black men. Increased criminal involvement, declining marriage rates, and increased levels of transfer payments are among these factors. In each case, declining labor force attachment may be a cause as well as a result of the development.

Blacks are disproportionately involved in crime, and their involvement seems to have increased. In 1960 blacks were 34.3 percent of all prison admissions; by 1980 their share had risen to 42.7.[20] Census data show that the proportion incarcerated among black men ages 25–34 rose from 3.5 percent in 1970 to 4.2 percent in 1980, while the white male proportion remained the same at only 0.6 percent.

Although the prison population is itself excluded from our calculations of labor force participation, criminal activity and imprisonments could have a significant effect on the labor force statistics in several ways. The proportion of blacks out of prison who are involved in crime is considerably larger than the prison population. Alfred Blumstein and Elizabeth Grady (1981–1982) estimate that the cumulative lifetime probability of at least one arrest for a felony is 51 percent among black men living in large metropolitan areas compared to a cumulative probability of 14 percent for white men in the same cities. Arrests, trials, and the like would certainly interrupt employment; and those who have been in prison must surely experience increased difficulty in finding employment when they are released. It is not really known how active offenders would report their labor force status to the census or if they are less likely to be counted at all.

Another trend that may be related to the decline in labor force attachment among younger men, and blacks in particular, is the decline in marriage. Between 1970 and 1980, the proportion of married men ages 25–34 declined from 82 to 69 percent for whites and from 74 to 56 percent for blacks (see chapter 5). Married men typically have much higher rates of labor force participation than single men. Therefore, the decline in marriage rates may have led to reduced labor force participation overall.[21]

The increasing labor force participation and career commitment of young women during this period may have been a causal factor for delayed marriages among both blacks and whites. Additionally, the earnings of black women have increased sharply, rising from 65 percent of black male earnings in 1966 to 79 percent in 1980.[22] This may have been a destabilizing factor for marriages.[23] From 1965 to about 1973, rising welfare payments and a large increase in participation in the aid to families with dependent children program may have also contributed to a lower propensity for women to marry.[24] It is also possible that causality goes the other way; i.e., that the decline in labor force participation led to the decline in marriage. Thus, labor force participation, marriage rates, and possibly criminal activity may interact with each other; and these relations are likely to be complex.

A final possibility stems from the fact that benefits, such as food stamps, did not exist until the late 1960s. Although food stamps are unlikely by themselves to induce an individual not to work, nonetheless, they are available as supplements to unemployment compensation (or to unreported criminal or underground activity) and therefore, may enable individuals to be out of work longer and more frequently.[25]

In sum, the decline in labor force participation among younger black men was not as great as for older men. The possible explanations for the decline are complicated, and the issue is by no means resolved. It is an important issue, however, because extended periods out of the labor force at younger ages are likely to have negative effects on earnings opportunities at older ages.

[20] See Langan (1985) for these statistics (table 1). Also note that the available evidence suggests that the high proportion of blacks appearing in arrest and prison data appears to be explained by disproportionate involvement in criminal activity rather than by racial differences in the administration of justice. See Langan on this point; also Blumstein (1982).

[21] In 1970, among 25–34 year-olds, 95 percent of married black men were in the labor force, compared to 73 percent of single men. For white men these proportions were 98 percent and 83 percent. (Statistics are from the 1970 Census of Population.)

[22] See J. O'Neill (1983). The earnings of white women did not rise significantly over this period relative to those of white men.

[23] For a discussion of the relation between women's work, marriage, and divorce, see Becker, Landes and Michael (1977).

[24] See J. O'Neill (1986).

[25] Tabulations from the microdata file of the March 1980 Current Population Survey show that among black men ages 25–44 who worked less than 27 weeks in 1979, the following percentages received particular transfers: food stamps (26 percent); SSI (6 percent); social security (10 percent); welfare (10 percent); unemployment compensation, veteran benefits, or worker's compensation (24 percent). These percentages are similar for white males of the same age and work experience, with the exception of food stamps and welfare, for which whites have lower recipience rates. These percentages, it should be noted, are underestimates. Based on a comparison with program data, actual food stamp receipt, for example, is about 30 percent higher than the self-reported data show.

Unemployment

Racial differences in unemployment, like racial differences in labor force participation, have tended to widen between 1940 and 1980. As indicated in table 2.8, blacks consistently have had higher rates of unemployment than whites, and this gap has grown over time. In 1940 blacks were 30 percent more likely than whites to be unemployed; by 1980 they were more than twice as likely to be unemployed.

The forces generating trends in unemployment appear to differ from those generating trends in labor force participation. Most of the increase in the unemployment gap occurred between 1940 and 1960, whereas a substantial increase in black-white differences in labor force participation occurred between 1960 and 1980.

Causes of Unemployment

To examine more precisely the black-white gap in unemployment, table 2.9 presents unemployment rates classified by level of education and region of residence. One of the strongest patterns emerging from the table is that more highly educated individuals are not as likely to be unemployed as less educated individuals. Education is associated with lower unemployment, in part, because firms tend to make larger investments in skilled workers (in the form of hiring costs and training) and would, therefore, be reluctant to lose them through layoffs.[26] Since blacks, on average, have less education than whites, it follows that racial differences in education are a contributing factor to racial differences in unemployment. Nevertheless, education is clearly not the only factor creating the racial gap in unemployment. Even within groups narrowly defined by education, blacks still have higher rates of unemployment.

Another strong pattern emerging from the table is that unemployment is substantially lower in the South than in the rest of the country. Since blacks are more likely to live in the South than whites, racial differences in region of residence should serve to *reduce* the black-white gap in unemployment. Even when comparing individuals who reside in the same region, however, blacks still have higher rates of unemployment.

Marital status and type of industry or occupation are other factors that might contribute to racial differences in unemployment. To explore this possibility, table 2.10 shows black-white differences in unemployment in 1980 adjusting for age, education, marital status, and industry and occupation of employment. In both the South and non-South, adjusting for marital status reduces the black-white gap in unemployment (row 3).[27] Adding an adjustment for industry and occupation of employment further reduces racial differences in unemployment (row 4), indicating that blacks are more likely than whites to work in industries and occupations with high unemployment. The effect of industry and occupation of employment on the black-white gap in unemployment may reflect racial differences in skill. However, it also may reflect discriminatory practices that prevent blacks from freely entering certain industries and occupations.

A simple discrimination argument alone does not explain the patterns observed in tables 2.9 and 2.10. The unemployment differential in the South is usually quite small even before adjusting for various characteristics, and at least in 1980, after adjusting for other characteristics, it becomes statistically insignificant from zero (table 2.10). Moreover, unlike the gap in wages, the black-white unemployment differential in the South is much smaller than it is elsewhere. This is especially true in the decades from 1940 to 1960. Yet, in this period, the South was highly segregated, and it is widely believed that discrimination was more deeply rooted there than in the rest of the country.

Nevertheless, it is possible that discrimination contributes to the black-white gap in unemployment. As chapter 3 explains, in a competitive economy with flexible wages, discrimination is likely to drive a wedge between black and white wages. This wage differential might influence even prejudiced employers to hire blacks. However, Harry Gilman (1965) points out that, "if there are legal or quasi-legal pressures towards nonwhite-white wage equality, discrimination may take the form of reducing the employment opportunities of nonwhite relative to white workers. Thus, we would expect a greater effect of such factors as statutory and union minimum wages on the employment opportunities of nonwhite than of white workers; employment opportunities should fall more for nonwhite than for white workers."

[26] See Becker (1964) and Oi (1962).

[27] See the discussion of marital status in chap. 5.

TABLE 2.9

Male Unemployment Rates by Race, Education, and Region

	1940	1950	1960	1970	1980
Black					
Less than 12 years					
Non-South	17.0	10.3	10.7	5.7	14.9
South	7.1	4.6	6.8	3.9	8.6
12 years or more					
Non-South	12.6	5.6	5.9	3.8	9.4
South	5.0	3.3	3.9	2.4	5.6
Total	9.6	6.4	7.8	4.2	9.0
White					
Less than 12 years					
Non-South	9.5	4.7	5.5	4.2	8.4
South	5.9	3.0	4.9	2.8	5.6
12 years or more					
Non-South	5.2	2.3	2.1	2.0	4.0
South	3.3	1.6	1.6	1.3	2.3
Total	7.6	3.4	3.7	2.6	4.4
Difference (black minus white)					
Less than 12 years					
Non-South	7.5	5.6	5.2	1.5	6.5
South	1.2	1.6	1.9	1.1	3.0
12 years or more					
Non-South	7.4	3.3	3.8	1.8	5.4
South	1.7	1.7	2.3	1.1	3.3
Total	2.0	3.0	4.1	1.6	4.6
Ratio (black divided by white)					
Less than 12 years					
Non-South	1.8	2.2	1.9	1.4	1.8
South	1.2	1.5	1.4	1.4	1.5
12 years or more					
Non-South	2.4	2.4	2.8	1.9	2.3
South	1.5	2.1	2.4	1.8	2.4
Total	1.3	1.8	2.1	1.6	2.0

Notes: Ages 25-64.

Source: Census of Population, 1940-1980, Public Use Sample.

TABLE 2.10

Accounting for the Black-White Gap in Unemployment of Men Ages 25-64, 1980

Unemployment gap	South	Non-South
(1) Unadjusted	3.3	6.6
(2) Adjusted for: education, age	1.9	5.2
(3) Adjusted for: (2) + marital status	1.2	4.2
(4) Adjusted for: (3) + industry and occupation	0.5*	3.2
Percent of gap explained by characteristics	85%	52%

Note: Estimates are based on a linear probability model of the determinants of unemployment. The sample consists of persons currently in the labor force, and rows 2-4 measure the effect on the unemployment gap resulting from the addition of the variables indicated in the table.

[1] Black rate of unemployment minus the white rate of unemployment.
*Not statistically different from zero at the 95 percent confidence level.

A key factor in explaining regional differences in unemployment is whether wages are more flexible in the South than elsewhere. In fact, unionization, which typically reduces wage flexibility, has always been lower in the South.[28] Moreover, until the late 1960s, the South had a smaller proportion of employment covered by the minimum wage, and enforcement also seems to have been weaker in the South.[29] Thus, discrimination outside the South may surface in racial differences in unemployment, whereas discrimination in the South may be reflected in racial differences in wages.

This is one of several possibilities. Many factors in addition to, or in conjunction with, discrimination could also be producing these patterns in unemployment, and more research is needed to identify the causes of the black-white gap in unemployment.

Trends in Unemployment

As previously noted, the black-white gap in unemployment increased substantially between 1940 and 1980, with the primary increase occurring between 1940–1960. Part of the reason for this pattern may be due to the effects of migration. Chapter 5 details the large-scale migration of blacks from the rural South to the urban North between 1940 and 1960. Newcomers in an area tend to have higher unemployment rates than long term residents. Consequently, migration itself would have generated unemployment among newly arrived blacks. In addition, the compositional shift of blacks towards the North, where unemployment is greater, would have tended to increase the overall black-white gap in unemployment. (Within the South, migration also occurred from rural to urban areas, which might explain why the black-white gap in unemployment increased moderately there.)

Nevertheless, migration cannot explain all of the observed patterns. Between 1940 and 1980, black-white differences in educational attainment and occupational status narrowed dramatically, which should have contributed to a reduction in the unemployment gap. For the 1940–1960 period, the effects of migration may simply have overwhelmed advancements in education and occupation. For the 1960–1980 period, however, migration was much smaller, and blacks continued to register impressive gains relative to whites in educational attainment and occupational status; yet, there was no systematic narrowing of the unemployment gap over the period.[30]

Thus, the constancy of the black-white gap in unemployment between 1960 and 1980 remains a puzzle. It may simply reflect changes in various factors that offset the improvements in black educational attainment and occupational status. For example, the generally higher level of transfer payments in the 1970s, downward trends in rates of marriage, and increases in the rate of crime may have contributed to the increase in the unemployment gap, though a case could be made that the cause-effect relations go the other way. Possibly, cyclical factors played a role, since the overall level of unemployment was somewhat higher in 1980 than in 1960. Additionally, as discussed in chapter 7, enforcement of civil rights laws may have increased black earnings as well as reduced overall black employment. These are just conjectures, however. Black-white differences in unemployment are not well understood, and further research is clearly required.

Weeks and Hours of Work

Lower labor market participation and higher unemployment rates among blacks mean that the average black is employed for less time during the year than the average white. This accounts for part of the black-white gap in *annual* earnings.

Census data for 1950 through 1980 report the number of hours worked by each person during the week in which the survey was taken and the number of weeks worked during the previous calendar year. Based on these data, table 2.11 presents average

[28] See Gilman (1965), p. 1092.

[29] Gilman (1965) footnote p. 1092.

[30] Blacks hold different occupations than whites with the same age and education, but the difference has narrowed over time. We have computed indices of occupational dissimilarity which measure the percentage blacks that would have to change occupations to make the distribution of blacks across occupations the same as that of whites. A value of zero would indicate that blacks and whites have identical occupational distributions; a value of 100 percent indicates total racial separation by occupation. Between 1960 and 1980 these indices changed as follows:

Index of Occupational Dissimilarity

Education	*1960*	*1980*
Men 25-39:		
0-11 yrs.	34.0	30.6
12-15	45.3	29.8
16+ yrs.	47.1	27.8
All groups	44.0	33.2

TABLE 2.11

Weeks and Hours Worked for Men by Race and Age

	1950	1960	1970	1980
	Mean weeks per year[1]			
Black				
25-34	40.3	44.5	47.4	44.1
35-44	44.2	45.0	47.7	46.7
45-54	44.1	44.4	47.4	46.8
55-64	42.6	43.0	46.4	46.2
Total	43.6	44.4	47.3	45.9
White				
25-34	45.9	47.6	48.7	47.3
35-44	47.1	48.4	49.5	48.8
45-54	46.2	47.6	49.1	48.9
55-64	45.0	46.1	47.5	47.0
Total	46.2	47.6	48.8	47.9
	Mean hours worked per week[2]			
Black				
25-34	41.8	40.6	40.2	40.0
35-44	43.2	41.0	40.8	41.1
45-54	43.4	40.6	40.4	40.7
55-64	43.3	39.8	39.4	39.8
Total	42.8	40.6	40.3	40.4
White				
25-34	44.6	44.0	43.3	43.5
35-44	46.0	45.3	44.8	45.2
45-54	45.7	44.8	44.1	44.5
55-64	44.6	43.2	42.6	42.7
Total	45.3	44.5	43.0	44.0

[1] Weeks worked refer to male workers who worked during the preceding calendar year.
[2] Hours worked refer to hours worked by male workers at work during the week of the census survey.

Source: Census of Population, 1940-1980, Public Use Sample.

weeks and average hours for people who worked in the previous year. The table shows that blacks work fewer weeks and fewer hours per week than whites.

In 1950 white men (who worked) were employed 2.6 weeks per year more than blacks. Between 1950 and 1970, weeks worked rose for both groups, but more among blacks; and the racial differential in weeks worked fell to 1.5. Between 1970 and 1980, however, weeks worked fell for both blacks and whites by about one week.

Similarly, white men tend to work more hours per week than black men, and this differential has been stable at about 3 to 4 hours over the past 30 years. Hours worked per week fell between 1950 and 1960 among both races but have since remained steady.

Estimates of annual hours of work, a broader measure of work activity, can be calculated by multiplying average weeks and hours per week. Such estimates indicate that black men ages 25–64 worked on average from 10 to 17 percent fewer hours annually than white men. In 1980, for example, black men worked 14 percent fewer hours than white men, a difference of about 250 hours. This implies that adjusting for differences in hours worked would raise the annual earnings of blacks by 14 percent, which would eliminate roughly one third of the gap in relative earnings (see table 1.2). The same calculations for other years and specific age groups reveal basically the same result: that racial differences in annual hours of work account for an important share of the overall differential in annual earnings.

Since the earnings gap is smaller when based on hourly or weekly earnings than on annual earnings, the question arises whether one measure is more or less appropriate than another for analyzing black-white earnings differences and for drawing inferences about the extent to which discrimination may affect the differences. The answer depends on the reasons for the racial differential in weeks and hours worked. As noted in the discussion of unemployment, in free and unrestricted markets discrimination could affect hourly pay rates rather than employment. The presence of wage rigidities, however, such as equal pay laws or wage floors mandated by union arrangements, would prevent employers from discriminating against blacks in the form of lower pay in many situations; but discrimination might then emerge as higher unemployment for blacks.[31] Discrimination may also influence employment indirectly through occupation or training.

If wage rigidities were pervasive, it would be appropriate to use annual wage ratios to compare the earnings of blacks and whites because discrimination in this case is more likely to affect weeks worked than hourly pay rates. On the other hand, if markets were relatively free of rigidities, the hourly wage rate would, in principle, be the most accurate measure because it is not affected by differences in the amount of time worked. In many circumstances, hours worked reflect voluntary decisions about the amount of time the individual wishes to work.

To take account of both possibilities, this report examines annual earnings ratios as well as weekly or hourly wage ratios.[32] When only one measure is considered, it is usually weekly earnings ratios.

Summary

In 1940 labor force participation rates of black men and white men were approximately the same. Over the next four decades, participation declined among all men, particularly older men and those with less than 12 years of schooling. The decline in labor force participation was considerably greater for blacks than for whites, even with schooling and age held constant. For example, between 1950 and 1980, the decline in labor force participation rates among men aged 45–54 with 0–11 years of school was 14.2 percentage points for blacks and 7.5 percentage points for whites.

Much of the decline in the labor force participation of both black and white men aged 45–64 is attributed to the liberalization and rising benefit level in Federal disability and retirement programs (supplemented by food stamp, medical, and other benefits). The relatively greater decline among black men can be traced to their higher incidence of disability and their lower incomes, and to the fact that transfers are relatively more generous at lower income levels.

[31] Wage rigidities would also increase unemployment among those blacks or whites whose productivity had a lower value to the employer than the regulated wage. In practice, it could be difficult to distinguish the two situations due to imperfect measures of worker productivity.

[32] It should be noted, however, that hours worked are not likely to be as well measured as weeks worked. Hours have usually been measured in the census survey week in the spring. However, weeks worked and earnings refer to the previous calendar year. Hours worked per week during the calendar year may have averaged to different numbers than hours during the survey week, thus producing a possible bias.

The decline in labor force participation among younger men (ages 25–34) was not as great as for older men. Possible explanations for it include increased criminal involvement, declining marriage rates, and the introduction of transfers such as food stamps. These factors may interact in a complicated way, and the issue is by no means resolved.

A significant racial differential in unemployment has persisted over the decades. This differential can be partly attributed to schooling differences. However, black male unemployment rates exceed those of whites within schooling and regional categories. The differential in unemployment has always been much larger in the North than in the South. This was especially true in the period 1940–1960, despite the apparently greater level of discrimination against blacks in the South during the period. One reason for the relatively low black unemployment rate in the South was the relative absence of unionization or other pressures to equalize pay. As a result, discrimination may have been reflected in the form of lower pay rather than unemployment differentials. The widening of the black-white gap in unemployment over the 1940–1980 period remains puzzling in light of the convergence in racial differences in schooling and in occupations.

Levels of work activity over the year are lower among blacks because those who work are employed fewer weeks per year and fewer hours per week. Because of these differences in time worked, the earnings gap is smaller when based on weekly or hourly earnings than on annual earnings.

PART II

Sources of the Earnings Gap, 1940–1980

The earnings gap between black and white men clearly requires an explanation. One obvious possibility is labor market discrimination. Another is differences in skills or in other characteristics known to affect earnings. Although the acquisition of skills may be affected by discrimination in the labor market (e.g., in the provision of training) and by past discrimination by government (e.g., in the provision of schooling), it is, nonetheless, useful to the formation of effective policies to separate out the effects of the various factors. Part II examines in detail likely sources of the earnings gap, first individually and then as a whole.

Chapter 3 discusses the economic theory and measurement of discrimination. Chapters 4 and 5 identify several important characteristics associated with earnings and examine each as a potential source of the earnings gap and as a force in narrowing the gap since 1940. Education and training are the focus of chapter 4; geographic region and other factors are discussed in chapter 5. Of course, these characteristics may be interrelated. While chapters 4 and 5 examine each characteristic separately, chapter 6 presents a multivariate statistical analysis that takes account of possible interdependencies among the variables.

Chapter 3

The Economics of Discrimination: Theory and Measurement

Discrimination against blacks can lead to racial differences in wages among workers with identical labor market productivity. The theory of labor market discrimination developed by Gary Becker demonstrates that such discrimination may arise even in competitive markets if employers are so strongly prejudiced against a group that they would employ group members only at a lower wage (Becker, 1957). Becker terms this wage discount a measure of the employer's "taste for discrimination"—the employer's distaste for or psychic cost of employing the worker.

Discrimination is not costless to the employer. If, as a result of discrimination, blacks (equal in productivity to whites) had lower wage rates, an employer with relatively more white workers would have higher costs and, therefore, could lower these costs (and increase the firm's profits) by hiring more blacks. If a sufficient number of nondiscriminatory employers entered the market, or if existing nondiscriminatory employers expanded production, blacks' earnings would eventually be bid up, and the gap due to discrimination would close. Becker's theory, on the other hand, shows that discrimination could persist for long periods if prejudice was strong and pervasive or if constraints were imposed on the growth of firms that did not discriminate or on the mobility of black workers.

In Becker's model, coworkers and customers may also be sources of discrimination even if employers themselves do not discriminate. If white workers demand higher wages to work with blacks, employers would have an incentive to operate segregated establishments because integration would be more expensive. In this case the wages of blacks and whites with the same productivity would tend to be equalized, though they would work in different establishments. It is possible, however, to conceive of situations where the operation of fully segregated plants is not feasible; for example, if there were too few skilled black workers to complement unskilled blacks. This case would lead to integrated plants with discriminatory wage differentials between blacks and whites.[1]

Consumer prejudice could lead to discriminatory pay differentials in situations where workers and consumers interact, such as a doctor-patient or salesman-client relationship, if consumers were willing to pay a premium for services provided by a white. If blacks and whites were equally productive in these tasks, however, less prejudiced consumers would have an incentive to take their business to a black, thereby increasing the demand for blacks in

[1] See Becker (1957) for more details. Also, note that the few black workers who were skilled might be downgraded occupationally rather than paid less if the premium required by skilled whites to work alongside skilled blacks was more costly than the efficiency loss from employing skilled blacks in a lesser capacity. (Discrimination in capital markets likely would have been a barrier to self-employment of skilled blacks, which might otherwise have been an escape route.)

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these jobs. Moreover, consumer prejudice may simply lead blacks to seek employment in occupations with minimal consumer contact (such as factory work) or in businesses catering to a black clientele. Thus, jobs with little consumer contact and the existence of unprejudiced consumers reduce the extent to which prejudiced consumers can create racial differences in pay.

As discussed in chapter 2, if wages were completely flexible, discrimination would primarily affect hourly wage rates, rather than employment. In this case discriminatory preferences would be largely reflected in a lower wage rate for blacks; as a result, even some prejudiced employers would have an incentive to employ blacks.

If wages are not flexible, however, discrimination against blacks may well take the form of reduced employment for blacks. Forces affecting wage flexibility include minimum wage laws and union wage floors. Equal pay laws may also have the same unintended effect.[2] Firms that would have employed blacks at a lower wage rate will now have less of an incentive to do so, making it less costly for firms to discriminate against blacks and employ only whites.[3]

As an alternative to Becker's theory, some authors have developed the idea of statistical discrimination. According to this theory, employers who may not be prejudiced may still treat blacks differently from whites.[4] This theory presumes a world of limited information, where employers can only imperfectly assess the individual productivity of their employees. As a result they use rough proxies for productivity based on race, sex, schooling, and other readily observed characteristics. Thus, if employers find it difficult to evaluate black workers, they may treat individual blacks as having the average characteristics of all blacks. In this situation, talented blacks would earn less than their true skills would warrant, while blacks with below-average skills would earn more.[5] However, while the employer's inability to sort out the different types of labor may result in individual instances of discrimination, it will not necessarily lead employers to pay blacks less, on average, than they pay whites.[6]

The relevance of statistical discrimination for explaining black-white earnings differences has been questioned by D.J. Aigner and G.C. Cain (1977), who point out that the cost of obtaining information about workers may not be large relative to the gains from more precisely identifying worker productivity. Testing, reference checking, and trial work periods are methods that employers use to gain information that enables them to distinguish among individuals.[7] Moreover, black workers themselves would have an incentive to obtain credentials (such as licenses, degrees, school grades, and references) that would provide pertinent information to employers. Statistical discrimination may be relevant in some instances, such as choosing workers for summer jobs or other short duration employment where investment in information would not have a large payoff. However, it remains questionable whether statistical discrimination could be a significant factor in the long run for adult workers.

Becker's theory of discrimination has proven durable over the years as a basic framework for analyzing discrimination. It implies that labor market discrimination could persist over time, even in competitive markets, if a significant proportion of employers were strongly prejudiced or if laws and regulations interfered with the market process or impeded the mobility of blacks.

It is perhaps because market forces do tend to erode discrimination that groups wishing to perpetuate racial discrimination have sought to institutionalize it through legislation or to perpetuate it through regulation. For example, government laws and regulations in the Southern States clearly impeded the mobility of blacks in many ways. The unequal

[2] See chap. 2 for further discussion of this point.

[3] Laws and institutions that keep wages artificially high may increase or decrease the relative hourly wage of blacks. If all sectors of the economy were covered by the law or institution, the relative wage would likely increase, although employment of blacks would likely fall. If part of the economy is not covered by the law or institution (e.g., the nonunion sector), relative wages of black workers could fall. In particular, black workers who cannot obtain jobs in the covered sector may take jobs at a lower wage in the uncovered sector. If this effect is sufficiently large, the overall average wage of blacks would decline relative to that of whites.

[4] See Phelps (1972), Arrow (1972 and 1973), and especially the discussion in Aigner-Cain (1977).

[5] This would also apply to whites unless employers could more readily make distinctions among white workers.

[6] Whether or not statistical discrimination would lead to a lower average pay for blacks than for whites would vary according to the circumstances. See Aigner-Cain (1977) for a more detailed discussion of these points.

[7] The attempt to identify individual worker productivity sometimes conflicts with civil rights policy. In particular, the use of employment tests has been challenged as discriminatory, and their use appears to have declined (see Potter, 1986, p. 215). It is a matter of controversy whether this policy is beneficial to blacks. It is possible, for example, that the decline in testing actually increased statistical discrimination.

and meager allocation of school resources to blacks impeded the acquisition of skills (see chapter 4). Laws against vagrancy made it a crime to be unemployed, even if looking for new work, and other laws limited recruitment of black workers for jobs in another county.[8] Furthermore, blacks did not receive nearly adequate protection from law enforcement agents for their persons or their property.[9] The Jim Crow laws that came into effect in the South around the turn of the century *mandated* extreme forms of segregation. Although the North did not legislate segregation, unions often effectively kept blacks out of skilled jobs.[10]

The Civil Rights Act of 1964 in effect abolished the laws and regulations that mandated segregation and thereby facilitated the elimination of discrimination. In addition, the same forces that led to passage of the Civil Rights Act may also have raised the consciousness of Americans and in a more subtle way contributed to the elimination of discrimination. On the other hand, wage rigidities, such as the minimum wage and union wage floors, reduce the cost of discrimination to employers and may have facilitated the persistence of discrimination in employment. It is an empirical question whether the forces reducing discrimination have dominated the trend.

Measurement of Discrimination

Empirical studies of current labor market discrimination have not developed a way of measuring it directly. Instead, they typically investigate the factors that appear to be related to skills or productivity, and they then adjust the wage gap for racial differences in these factors. If all productivity differences could be measured perfectly, then a good case could be made that the amount of the wage gap left unexplained after accounting for these differences reflects current discrimination in the labor market.

Unfortunately, productivity cannot usually be measured directly. The best the analyst can do is to utilize characteristics that are believed to affect productivity, such as years of schooling or years of experience, and when available, the quality of schooling or family background. The intensity of effort, actual proficiency, or the difficulty of the work performed are factors that are seldom controlled for because they are not readily measured.

It should also be recognized that current labor market discrimination is not the only form of discrimination. For example, racial differences in educational attainment among workers today are likely to have been affected by discriminatory expenditure policies of State and local governments in the past. And skills acquired through on-the-job training over the years can also reflect discrimination if employers are reluctant to offer training to minorities. Moreover, past discrimination in the labor market may have reduced the incentive of blacks to obtain training or schooling. Available data and empirical estimation procedures are ill-suited to disentangling these different types of discrimination. Nonetheless, it is important to make these distinctions because remedies for the effects of past discrimination (for example, dealing with school resources) are quite different from remedies for current labor market discrimination.

Because of the problems involved in measuring productivity, definitive estimates of current labor market discrimination probably cannot be obtained. Despite these difficulties, however, an analysis of the major factors contributing to the black-white wage gap can enlighten our understanding of the sources of the gap and why it narrowed over time, and can provide boundaries to the possible role of market and nonmarket discrimination in the overall pattern.

Chapters 4, 5, and 6 investigate the major measurable factors that are likely to affect the black-white earnings gap: education, work experience, geographic location, industrial sector of employment, and marital status.

[8] Roback (1984) makes the case that these and other labor laws served to restrict black mobility, resulting in their exploitation. The extent to which these laws were actually enforced and effective has been questioned by Higgs (1986).

[9] See Higgs (1986) and Myrdal (1962).

[10] DuBois in *The Philadelphia Negro* (1899) cites examples of the exclusion of blacks from unions (chap. XVI, sect. 47). Also see Higgs (1986) and Myrdal (1962). Even if unions had not been hostile to blacks, they could have effectively excluded them due to preferential treatment of relatives and friends.

Chapter 4

Education and Training

Formal education is a principal means of enhancing labor market productivity, and it has traditionally been the key to economic progress for groups starting out with disadvantages. Schooling has been termed an "investment in human capital" because it is an activity that requires an outlay of money and time and, in turn, raises an individual's future productivity or earnings capacity (Shultz, 1961; Becker, 1964). Empirical research in this area has generally found a strong positive association between schooling and earnings.

It is likely that differences in educational attainment between blacks and whites can explain some portion of the earnings gap. Historically, blacks had extremely limited opportunities for schooling. The slave codes that were part of the legal structure of Southern States actually forbade the education of slaves, although clandestine schooling and training did occur (Bond, 1966; Bullock, 1967). Moreover, the concentration of blacks in the impoverished South during a period of extreme racial hostility was an impediment to the rapid educational development of freedmen after the Civil War (Jones, 1917). Over the decades, however, differences in schooling between whites and blacks have narrowed considerably, and this trend is expected to have been a force in narrowing the earnings gap.

This chapter first examines the trend in years of schooling completed for blacks and whites. As a proxy for actual skills acquired in school, years of schooling has obvious drawbacks. Unfortunately, data that match the earnings of individuals to real educational attainment are not generally available. In the absence of such data, secondary sources of information are explored to provide some insight into racial differences in the quality of schooling and educational achievement. The chapter closes with a brief discussion of another type of investment in human capital: training on the job.

Differences in Years of Schooling

Although blacks still complete fewer years of school than whites, this differential has narrowed considerably since 1940 (table 4.1). Over the 1940–1980 period, the mean level of schooling of both blacks and whites rose steadily, but the increase was much larger for blacks.

One reason for the educational deficit of blacks is their concentration in the South where educational levels historically have been below those of the rest of the country. Moreover, the black-white differential in schooling has always been larger within the South than in the non-South. Both the narrowing of the black-white schooling gap within the South (from more than 2 years in 1940 to 1 year in 1980) and the immigration of blacks to the North contributed to the sharp convergence in the racial differential in schooling for the U.S. as a whole.

The basic pattern of convergence in the black-white differential in schooling shows no change between 1940 and 1950 but accelerating improvements in each subsequent decade. The patterns shown in table 4.1, however, refer to all men in the working population aged 25–64. These men were born between 1876 and 1955, and their schooling took place over the course of a century—from the

TABLE 4.1

Mean Years of School of Male Wage Earners Ages 25-64 by Region and Race

	1940	1950	1960	1970	1980
Total U.S.					
White	9.03	9.85	10.65	11.65	12.83
Black	5.78	6.58	7.80	9.35	11.37
Difference[1]	3.25	3.27	2.85	2.31	1.46
South					
White	8.71	9.37	10.13	11.22	12.48
Black	5.13	5.88	6.91	8.53	10.89
Difference[1]	3.58	3.49	3.22	2.69	1.59
Non-South					
White	9.15	10.06	10.83	11.80	12.92
Black	7.31	7.98	8.94	10.20	11.91
Difference[1]	1.84	2.08	1.89	1.60	1.01

[1] White mean schooling minus black mean schooling.

Source: Census of Population, 1940-1980, Public Use Sample.

TABLE 4.2

Years in Which Successive Birth Cohorts Reach Different Stages in the Life Cycle

	Years cohort reaches ages:				
Birth years	**5-14**	**25-34**	**35-44**	**45-54**	**55-64**
1876-1885	1890	1910	1920	1930	1940
1886-1895	1900	1920	1930	1940	1950
1896-1905	1910	1930	1940	1950	1960
1906-1915	1920	1940	1950	1960	1970
1916-1925	1930	1950	1960	1970	1980
1926-1935	1940	1960	1970	1980	
1936-1945	1950	1970	1980		
1946-1955	1960	1980			

TABLE 4.3

Mean Years of School Completed by Race and Age (male civilian population)

	1940	1950	1960	1970	1980
White					
25-34	9.95	10.87	11.55	12.48	13.40
35-44	9.02	10.06	11.05	11.85	12.96
45-54	8.11	9.13	10.05	11.24	12.14
55-64	7.61	8.18	8.96	10.16	11.41
Black					
25-34	6.12	7.77	9.17	10.74	12.25
35-44	5.49	6.61	8.05	9.65	11.50
45-54	4.98	5.66	6.69	8.34	10.12
55-64	4.43	4.88	5.67	6.85	8.60
Differential (white minus black)					
25-34	3.83	3.10	2.38	1.74	1.15
35-44	3.53	3.45	3.00	2.20	1.45
45-54	3.13	3.47	3.36	2.90	2.03
55-64	3.18	3.30	3.29	3.32	2.81

Source: Census of Population, 1940-1980; Public Use Sample.

1880s to the 1970s. This is made clear in table 4.2, which traces each group in the census data back to the approximate dates when they were in primary school. Thus, the educational attainment of older members of the labor force reflects changing patterns of school attendance only with a long lag.

To have a clearer understanding of these patterns, a detailed historical examination follows of trends in educational attainment and enrollment rates and of the factors related to these trends. In addition, problems of measurement that are believed to bias the reported attainment of older age groups in the 1940–1960 censuses are examined.

Convergence in Schooling Across Cohorts

Starting in 1940, each census has requested information on the educational attainment of the population. Thus it is possible to compare the highest grade completed by black and white men in the same age group and to examine the progress of successive cohorts (table 4.3). It is immediately apparent that for the age group 25–34, a steady and substantial decline in the black-white schooling differential has occurred over the period 1940–1980—from 3.8 years to 1.2 years. At older ages, however, little or no convergence in years of schooling occurred until 1980; in fact the gap widens between 1940 and 1950 for the age groups 45–54 and 55–64. It is this pattern for the older groups that retards convergence in the schooling gap for all ages combined (as shown in table 4.1).

The widening in the schooling gap and the slow rate of change for older age groups is puzzling. Two explanations have been given. James Smith (1984) maintains that it reflects a period of reduced governmental spending on black schools, a consequence of disfranchisement in the South around the turn of the century. Robert Margo (1986 a,b) suggests that the widening in the differential results from an upward bias in reporting of highest grade completed in the census, particularly by blacks, for those who completed their schooling before 1910. Corrected data, according to Margo, would show a continuous narrowing in the black-white schooling differential over time.

The implications of these two explanations are radically different. If schooling is misreported, as Margo claims, then comparisons of earnings by education would be misleading for all groups aged 45 and over in 1940, and aged 55 and over in 1950. Each explanation is considered in the next section,

which examines the historical forces underlying the rise in schooling of blacks.

Disfranchisement and Black Enrollment in the South

Starting in the 1880s, the Southern States moved to disfranchise blacks through a series of laws and regulations prescribing various kinds of voting requirements.[1] Several authors have linked this loss of voting rights to a relative decline in various measures of the quality of schooling available to southern blacks.[2] The available evidence from this period is highly fragmentary. A sharp increase in black-white differences in teachers' pay and in the length of the school term has been indicated for certain counties and States in the South during the period.[3] A new look at the historical documentation, however, suggests that some of the examples cited have exaggerated the facts.[4] It has also been noted that another indicator of school quality—the pupil-teacher ratio—appears to have grown somewhat more equal between the races during this period.[5]

To put these pieces of evidence in perspective, it is important to recognize that public schools had not been well established in the South before the Civil War (Bond, 1966). After the war the South was a devastated and still largely rural area. In this setting, the problems associated with the development of a universal public school system were enormous. The U.S. Commissioner of Education in 1887–1888, in comparing the educational situations of the South and the North, noted that the South was burdened with: (1) a relatively high ratio of school age children to adults; (2) a relatively low tax base due to its relatively low level of wealth per capita; and (3) a relatively sparsely settled population.[6] As a result, school expenditures per capita were much lower in the South than in the North.[7] Moreover, given the scattered rural population, southern schools were smaller and less cost effective than northern schools, where economies of scale could be realized. The one-room schoolhouse was often the rule, and many children lived too far from school to attend on a regular basis.

The situation for black children in the South was particularly desperate. Whites in the South were themselves poor and resented paying for the schooling of black children. During the period 1865–1870, the Freedmen's Bureau had financed the establishment of many schools for black children, and through its efforts about 6 percent of black children were enabled to attend school each year (Welch, 1973). After the period of disfranchisement, the funding of schools for black children in many Southern States appears to have reverted largely to whatever the black community could provide from its own tax dollars.[8] For example, J.Y. Joyner, the State superintendent of public schools in North Carolina in 1909, calculated that little transfer of

[1] Bullock (1967) notes several types of voting restrictions that were adopted in the Southern States. State laws included a tax test whereby payment of a poll tax was required to vote. Some States imposed a property test. Georgia, for example, required voters to own 40 acres of land or $500 worth of property. Education tests were also imposed, requiring skills such as ability to read or write, or a knowledge of the Constitution. Such requirements, Bullock maintains, were not impartially enforced, and as a result blacks were virtually disfranchised. See Kousser (1974) for an extensive discussion.

[2] See Bond (1966), Du Bois (1911), Welch (1973), and Margo (1985).

[3] Ibid.

[4] Take the frequently noted example concerning teachers' pay in Mississippi. Horace Mann Bond in his seminal work on the education of blacks in the South (first published in 1934 and reprinted in 1966) cites data showing identical pay for black and white teachers in Mississippi from 1877–85 followed by a sharp break in equality in 1886 and thereafter. Bond relates the change to legislation enabling diversion of funds from black to white schools. The incident has been cited by Welch (1973) and repeated by Smith (1984), who attributes it to disfranchisement. Bond's source is a study by Noble (1918). The economic historian Robert Margo investigated Noble's sources, which were the reports of the State education commissioners of Mississippi, and found that teachers' pay in fact was not reported separately for blacks and whites for the years 1877–85. Noble simply listed the State average pay for both black and white teachers, which accounts for the coincidence of identical salaries (to the penny) in each of the 9 years. Starting in 1886, separate salaries are given in the State statistics for black and white teachers, and they are not equal. It is likely they were never equal. It does appear, however, that the black-white ratio of teachers' pay declined in the State after 1886.

[5] See Welch (1973) who shows a decline in class size in black schools both absolutely and relative to whites from 1870 to 1890.

[6] Based on data from the 1880 census, 40 school-age children could be gathered into 1 square mile in Rhode Island, while the same number were scattered over 40 square miles in Florida. The average number of children (aged 6–13) per square mile was 15.2 in the Northeastern States, compared to 5.6 in the Southeastern States and 3.1 in the South Central States. In addition, net regional wealth per minor was $2,634 in the Northeast, compared to $851 in the Southeast and South Central States combined (Education Report, 1887–88, p. 21–28).

[7] Total school expenditures per capita of the population in the South Atlantic division were 20 percent of those in the North Atlantic in 1870 and rose to 35 percent in the 1880s (*Report of the Commissioner of Education*, 1889–1990, p. 37). The Commissioner's reports noted, however, that southern statistics likely underestimated expenditures due to private payments and supplements that were not counted in the data.

[8] See Kousser (1980).

funds was made from the white community to provide for the schooling of black children, noting:

> This report shows that the Negroes paid for schools in taxes on their own property and polls about $163,417.89, or nearly one-half of all that they received for school purposes. Add to this their just share of fines, forfeitures and penalties and their share of the large school tax paid by corporations to which they are entitled under the Constitution by every dictate of reason and justice, and it will be apparent that the part of the taxes actually paid by individual white men for the education of the Negro is so small that the man that would begrudge it or complain about it ought to be ashamed of himself. In the face of these facts, any unprejudiced man must see that we are in no danger of giving the Negroes more than they are entitled to by every dictate of justice, right, wisdom, humanity and Christianity.[9]

Despite these obstacles, education did spread in the black community. Historical data reveal an impressive increase in school enrollment rates among successive cohorts of blacks in the period after emancipation and a convergence in black-white enrollment differences. According to the decennial censuses, in 1860 only 2 percent of black youth (ages 5–19) were enrolled in school; by 1880 the proportion enrolled had increased to one-third (table 4.4). During the next 20-year period, black enrollment rates appear to have declined slightly, although this decline may be the result of definitional changes rather than a real phenomenon.[10] However, since white enrollments showed an even sharper decline, the racial differential in school attendance continued to narrow during this period.[11] After 1900 enrollment rates of both races increased steadily, but the growth among blacks was more rapid, and as a result the differential fell below 5 percent by 1950.

How were blacks able to make these remarkable gains amidst the poverty and hostility of the post-Reconstruction South? One likely contributing factor was a relative rise in black wealth, as black farm ownership and land holdings grew (Higgs, 1982; Margo, 1984). Since black taxes seem to have been the primary source of support for black schools, the rise in wealth would have enhanced the resources available for black schools.[12] In addition, blacks could, and there is some evidence they did, migrate to areas with better schooling opportunities, even within the South.[13] It is also noteworthy that family demand for children's schooling likely increased as parental incomes and literacy rose.[14] Finally, the development of the South itself probably boosted black opportunities. Enrollment rates in the South, which had been considerably below those in the North in 1880, rose rapidly and reached northern levels by 1920.[15] Even had blacks not made educational gains on whites in the South, black school participation nationally would have likely increased relative to that of whites because a disporportionate share of black youth (ages 5–20) lived in the South (92 percent in 1910 versus 28

[9] Superintendent of Public Instruction (1910), p. 54.

[10] Differences in the age groups included in the enrollment and population data probably explain some of the decline in enrollment rates for whites and most of the decline for blacks. Thus, all enrolled persons, regardless of age, were included in the numerator, but only those aged 5–19 were included in the denominator in calculating the enrollment rates for 1850–1880. In 1890 only persons aged 5–19 were included in the numerator, which would lower the rates somewhat. In 1900 enrollment and population were expanded to include all persons aged 5–20. Since few are enrolled at age 20, this would further lower the enrollment rate. Data from a special census report (Department of Commerce, Bureau of the Census, 1918) show that for the fixed age group 10–14, the black enrollment rate increased each decade from 1890 to 1910 (from 51.7 to 53.8 to 68.6 percent), while the rate for whites declined slightly from 1890 to 1910 (from 84.6 to 84 percent) and increased between 1900 and 1910 to 91.1 percent. The large increase in new immigrants may have depressed enrollment rates among whites in the North.

[11] See preceding footnote.

[12] Private philanthropic efforts such as the Peabody, Slater and Jeanes Funds, the General Education Board, and the Rosenwald Funds also provided funds for enhancing the educational facilities for black children in the South, but the total amounts were likely to have been relatively small. See Bond (1966).

[13] Enrollment rates among black children were considerably higher in urban areas. In 1910 the enrollment rate for black children aged 10–14 was 77 percent in urban areas and 66 percent in rural areas in the South. (Nationwide these figures were 81 percent and 66 percent.) Between 1890 and 1910, the proportion of the black population in urban areas increased from 15 percent to 21 percent in the South, and nationwide from 20 to 27 percent. Also, Margo (November 1985) discusses how blacks "voting with their feet" put pressure on white property owners to improve black school facilities, which they would do to prevent migration of black workers to other areas.

[14] In a statistical analysis of the determinants of racial differences in school enrollment in four Southern States in 1900, Margo (March, 1986) finds that school characteristics (school density, length of the school year) could account for only one-third of the attendance gap. Parental literacy, occupational status, and wealth accounted for more than half of the gap. Location in a cotton farm area also played a role. (Cotton was the chief crop for which children could be productively employed. By contrast, children in urban areas had few employment opportunities.)

[15] Enrollment data from both the census and the annual reports of the U.S. Commission of Education show little change in enrollment rates in the North between 1890 and 1920 and substantial increases in the South. Within the South, both sources show somewhat more rapid increases for blacks than for whites.

TABLE 4.4

Enrollment Per 100 Males of School Age by Race

	White	Black[1]	Difference[2]	Ratio[3]
1850	56.2	1.8	54.4	.032
1860	59.6	1.9	57.7	.032
1870	54.4	9.9	44.5	.182
1880	62.0	33.8	28.2	.545
1890	57.9	32.9	25.0	.568
1900	53.6	31.1	22.5	.580
1910	61.3	44.8	16.5	.731
1920	65.7	53.5	12.2	.814
1930	71.2	60.3	10.9	.847
1940	75.6	68.4	7.2	.905
1950	79.3	74.8	4.5	.943
1960	84.8	81.5	3.3	.961
1970	88.3	85.3	3.0	.966

Note: The ages included in the enrolled and school-age populations differ as follows:

1850-1880: Enrollment includes all persons enrolled regardless of age; the school-age population is 5-19 years.

1890 and 1940-1970: Enrollment and population include persons 5-19 years old.

1900-1930: Enrollment and population include persons 5-20 years old.

[1] Includes other nonwhite races.
[2] White rate minus black rate.
[3] Black rate divided by white rate.
Source: U.S. Bureau of the Census. *Historical Statistics of the United States: Colonial Times to 1970*, table H-433-441.

percent of whites) which was making gains on the rest of the Nation.[16]

The enrollment data show a constant narrowing of the racial gap in schooling participation between blacks and whites. Enrollment rates, however, do not provide full information on the amount of schooling attained, since attendance during the year and promotion rates can vary. The data on years of school completed reported in each decennial census starting in 1940 are intended to reflect the actual number of grades completed. As Smith (1984) has emphasized, the census data on educational attainment show a widening in the black-white schooling gap for the cohorts born 1886–1890 to 1901–1905, which is contrary to the findings on enrollment rates reviewed above. Smith's data are reproduced in table 4.5, arrayed according to the year the cohort reached age 10.[17]

Margo (1986a, 1986b) has suggested that the increase in the racial schooling gap is spurious and can be attributed to the inability of census enumerators to determine accurately the highest grade of school completed by persons attending ungraded schools. As Margo notes, the 1940 census asked for highest grade completed, but for those who had attended ungraded schools, the census enumerators recorded the "number of years the person attended school." Two factors make this issue of particular importance to blacks. One is that blacks educated at the turn of the century were likely to have attended an ungraded school. Margo notes, for example, that in Texas 89 percent of black schools were ungraded in 1900. Whites, on the other hand, most of whom lived outside the South, were much less likely to have attended ungraded schools. The second factor is that the number of years attended is likely to exceed the number of grades completed by a wide margin for blacks because southern black schools were typically kept open only a few months during the year. The average black student would have had to attend school for more than 1 year to complete a grade—2 years, in fact, according to Finis Welch (1973). Thus, a black reporting 6 years of school attended may have actually completed the equivalent of only three or four grades. As graded schools replaced ungraded ones, the reporting of actual grades completed no doubt improved. And as the length of the school term increased, years of school completed increasingly corresponded to actual grades completed. Since grades completed was a lower number than years attended, real increases in schooling would be obscured during the transition period.

Using data on school attendance by age reported in censuses starting with 1890, Margo has constructed two alternative measures of average years of schooling, and these are also shown in table 4.5.[18] The first measure simply reports the estimated number of years of school *attended* (whether or not a grade was completed). The second measure is an estimate of highest grade completed based on the actual number of months of school attended by the cohort each year and on the estimated number of months it would take to complete a grade.[19] The second estimate is available only for cohorts born between 1886 and 1890. Margo's estimates of the number of years attended, as expected, exceeds the census attainment measures. For whites, the difference in the two measures remains constant over the period considered. For blacks, however, the "years attended" measure rises more rapidly and, therefore, becomes increasingly higher than the "grades completed" measure. As a result, the racial gap in "years attended" converges steadily during the period. There is no mysterious widening as shown in the reported census data on years of school completed.

Margo argues persuasively that these discrepancies are the result of bias in the census data on grades completed for those attending ungraded schools. Using the number of months of school required to complete a grade, he estimates that the actual number of grades completed for the cohort reaching age 10 in 1896–1900 was 6.9 years for whites and 2.9 years for blacks. This leaves a racial gap of 4 years, 1 year larger than that obtained from the census attainment data reported in the 1940 census.

[16] The data on the regional distribution of the population are from U.S. Department of Commerce, Bureau of the Census, 1918.

[17] Note that data such as those presented in table 4.3, which provides years of school by age, were used by Smith to construct his cohort achievement measures. Schooling for cohorts born in the past century is based on the schooling of older persons reported in the 1940 and 1950 censuses. The widening in the schooling gap is also shown in table 4.3 as noted above.

[18] The census reports enrollment rates by age starting in 1890, from which Margo estimated how many years of school would be attended for the average person between ages 5 and 20. Since the census reports every 10 years, interpolation was required to make the calculations. The censuses of 1890 and 1900 also provided information on the number of months school was attended, which enabled a calculation to be made of lifetime months attended.

[19] Margo divides by 7.2 months (which was the average school term in the Nation) to obtain the highest grade completed. The U.S. Commissioner of Education in 1890 used 200 days (based on the best northern records) to make a similar calculation.

TABLE 4.5

Highest Grade Completed and Years of School Attended by Race for Cohorts Born Pre-1885 to 1961-64

Year cohort reaches age 10	Census attainment measure of highest grade, unadjusted[1]			Estimated years attended[2]			Estimated highest grade adjusted[3]		
	White	Black	Diff.	White	Black	Diff.	White	Black	Diff.
Pre-1875	6.8	2.4	4.4						
1875-80	7.1	3.1	4.0						
1881-85	7.2	3.6	3.7						
1886-90	7.4	4.1	3.3						
1891-95	7.6	4.4	3.2						
1896-1900	7.7	4.7	3.0	8.7	4.9	3.8	6.9	2.9	4.0
1901-05	8.2	5.0	3.2	9.0	5.5	3.5			
1906-10	8.7	5.4	3.3	9.5	6.4	3.1			
1911-15	9.1	5.7	3.5	9.9	7.2	2.7			
1916-20	9.7	6.3	3.5	10.5	8.0	2.5			
1921-25	10.2	6.8	3.4						
1926-30	10.7	7.7	3.1						
1931-35	11.1	8.4	2.7						
1936-40	11.4	9.1	2.3						
1941-45	11.7	9.8	1.9						
1946-50	12.0	10.5	1.5						
1951-55	12.3	11.3	1.1						
1956-60	13.7	11.9	0.8						
1961-64	12.5	11.8	0.8						

[1] Taken from Smith (1984), tables 3 and 4, rearranged to correspond with year cohort reached age 10 rather than year of birth.
[2] From Margo (1986a), table 1. Estimated from census enrollment data.
[3] From Margo (1986b). Estimated from census data on number of months of school attended and the number of months needed to complete a grade.

TABLE 4.6

Percentage Distribution of Years of School Completed by Race for Cohorts of Men Reaching Ages 25-29 Between 1940 and 1980

Cohort reaching ages 25-29 in:	White Years of school				Black Years of school			
	0-7	8-11	12-15	16+	0-7	8-11	12-15	16+
1940	17.1	41.3	32.3	9.1	59.3	27.3	11.1	2.4
1950	11.1	31.3	43.5	14.2	38.4	36.1	21.8	3.8
1960	8.2	24.0	48.4	19.4	22.9	36.3	34.7	6.1
1965	6.1	19.5	52.6	22.0	13.5	34.0	45.0	7.5
1970	4.5	16.5	53.2	24.5	9.5	30.3	51.6	8.9
1975	3.6	10.2	55.1	31.2	5.2	21.4	60.3	13.2
1980	2.8	11.1	61.0	25.3	3.5	21.2	64.2	11.2

Note: Cohort-specific averages taken across relevant censuses.

Source: 1940-1980 Censuses, Public Use Files.

In sum, considerable doubt has been cast on the measure of years of school completed reported in the census for persons born before 1900. The reported measure is a hybrid of actual grades completed and of years literally attended, even if for a few weeks per year. This problem is more serious for blacks than for whites. The implication of this finding is that analysis of schooling differentials or of earnings by education for these earlier cohorts is likely to be seriously biased, since reported schooling overstates actual grades completed. In the census data set used in this report, the groups primarily affected would be black men reaching ages 45–64 in 1940 and ages 45–64 in 1950. By 1960 most age groups are likely to have received their education in graded schools and would have been able to report on their highest grade completed. This still does not remove all upward bias in highest grade completed because grades were not adjusted for the length of the school term. A black attending a graded school in Alabama in the 1920s would overstate his educational achievement in the 1940 census because the length of the school term was so short. This source of bias was not omitted until the 1940s, as discussed below.

The overall picture presented by this review of the trend in the quantity of schooling obtained by blacks and whites is one of substantial convergence. Despite the enormous obstacles inherent in their situation as former slaves, isolated in a poor rural region, black parents managed to send their children to school in increasing numbers. By 1980 the black-white differential in years of school completed had narrowed to less than a year for young adults. In 1940 only 13.5 percent of young black men (aged 25–29) had completed 4 years of high school or more, one-third the percentage attained by whites; but in 1980, 75 percent of young blacks achieved high school graduation or more, and this was close to 90 percent of the white percentage (table 4.6).

Differences in School Quality and Educational Achievement

The number of years attended or even the highest grade completed do not adequately convey what a person has learned in school. This section reviews available information on the quality or productivity of schooling. Two types of data are examined. One type focuses on school resources, which are inputs to the education process. Another data source involves measures of educational performance or outcomes. Both types of data are intended to be merely suggestive, given the conceptual difficulties

involved in measuring school quality or educational achievement.

School Inputs

It is generally believed that the benefits from a year of schooling are affected by the resources devoted to it.[20] As discussed above, Horace Bond (1966), Margo (1985), and others have documented the low level of schooling resources made available to blacks in the post-Civil War South. Welch (1973) has associated the meager school resources allocated to blacks with the low black-white earnings ratios of earlier cohorts and has related the subsequent increase in the ratio with relative improvements in school quality for blacks.

Three measures of school resources or inputs are shown in table 4.7: average days of school attended per pupil during the year, the number of pupils per teacher, and teacher salaries per school day. These data are shown by region, and for the South by race. They vividly illustrate the large disparity in resources between black and white schools in the South and the even greater disparity compared to schools outside the South.

Early in the century, the school year was shorter, particularly in rural places, to accommodate the farmwork done by children. This helps explain why schools were open fewer days in the South, which was heavily rural. The differences in 1920 by region and race were enormous. Students in the South attended school 24 percent fewer days than students outside the South, and black students in the South attended school 24 percent fewer days than their white counterparts.

These differences in the length of the school year must certainly have affected what could be learned in a school grade if grades simply corresponded to the length of the school term. On the other hand, if students were not promoted until they mastered a certain amount of material, it would simply take more years to complete a grade when schools were kept open fewer days. Some evidence suggests that young people remained in the lower grades at older ages. Thomas Jones (1917, p. 33) notes that in 1910, 90 percent of black students aged 15–19 years were enrolled at the elementary school level. Welch (1973) estimates the average black took 2 years to complete the first grade in the early 20th century South. Thus, the dramatically shorter school term available to black children in the South was likely to have affected their schooling in two ways. One was to reduce the amount learned in a school grade; the other was to reduce the number of grades ever completed.

Other resources devoted to black and white pupils in the South also differed substantially early in the century. Black students on average attended classes with more than 38 students, a pupil-teacher ratio 46 percent larger than that found in southern white schools and 54 percent larger than in northern schools. Teacher salaries varied even more by race and region. In 1920, for example, teachers in black southern schools received 55 percent as much per school day as teachers in white southern schools and 40 percent as much as teachers in nonsouthern schools.

It is difficult to determine how much these differences in school resources reflect differences in the quality of a given number of grades completed. Differences in cost of living may account for some of the regional differences in teachers' pay. Moreover, black-white comparisons in pay may well reflect discriminatory pay-setting practices.[21] Some of the differences in school resources may also be due to compositional factors, since black students were heavily concentrated in the lowest grades where costs are typically lower. In addition, school quality differences may have varied by grade level, with smaller differentials at the secondary level. Jones (1917) writes that in the period around 1916 there were only 64 public high schools for blacks in the Southern States, and these were mainly located in the large cities of the Border States. The high schools of Washington, D.C., and St. Louis were noted as particularly outstanding. In the Deep South, secondary education for blacks was largely

[20] There is a large literature on educational "production functions" relating measures of schooling inputs with educational outcomes, usually measured by test scores. See, for example, Hanushek (1972), Coleman et al., (1966), Bowles and Levin (1968), and Michelson (1970).

[21] There is also some evidence that black teachers were poorly prepared. Thomas Jones, a specialist in the education of racial groups in the Federal Bureau of Education reported in 1916 that: "In view of the small remuneration and the lack of training facilities, it is little wonder that the majority of the public-school teachers are very poorly prepared. In Georgia and Alabama, for example, 70 percent of the colored teachers have temporary or emergency certificates representing a schooling of less than eight elementary grades." (See Jones, 1917.) However, Margo (1984), in a study of black-white differentials in the pay of teachers around 1910, found a substantial unexplained residual after accounting for differences in teacher qualifications. He notes, however, that his measures of qualifications may be inadequate.

TABLE 4.7

Measures of School Resources in Public Elementary and Secondary Schools by Race

	Non-South	South		Ratio of southern black to:	
	All	Black	White	Southern white	Non-South
Days of attendance[1]					
1920	146.8	86.0	112.8	.76	.59
1935	156.8	111.0	134.0	.83	.71
1940	156.0	127.9	143.4	.89	.82
1951	158.3	149.6	153.2	.98	.95
1953	160.9	151.2	156.7	.96	.94
Student-teacher ratio[2]					
1920	25.0	38.6	26.4	1.46	1.54
1935	32.3	44.8	33.5	1.34	1.39
1940	23.9	30.5	25.3	1.21	1.28
1951	25.3	31.7	27.6	1.15	1.25
1953	25.4	27.7	27.6	1.00	1.09
Teacher salary per school day[3]					
1920	7.82	3.10	5.60	.55	.40
1935	8.60	2.94	5.35	.55	.34
1940	10.10	4.07	6.42	.63	.40
1951	20.47	13.22	16.70	.79	.65
1953	22.25	15.83	17.59	.90	.71

[1] Average days of attendance per enrolled student in public schools.
[2] Ratio of student enrollment to number of public school teachers weighted by the attendance rate. The attendance rate is the proportion of total school term days attended by the average student.
[3] Average annual teachers' salary per day of school term.

Sources: These data were obtained primarily from various issues of the Biennial Survey of Education, supplemented by other sources cited in the bibliography.

private. These public and private high schools appear to have provided adequate schooling.[22] Thus, the few blacks who graduated from high school, or even the eighth grade, may have attended schools that were more nearly comparable to the schools of whites completing these levels.

The three indices of school resources shown in table 4.7 improved markedly for blacks in the decades after 1920, and in most cases the black-white gap narrowed as well. For example, the length of the school term for blacks rose from 0.76 of that of whites in 1920, to 0.89 in 1940, and to 0.96 in 1953. By 1954, the year in which the Supreme Court ruled that segregated schools are inherently inferior, differences in resources between black and white schools in the South had narrowed considerably.

Data on school resources by race are less readily available after 1954. *Brown v. Board of Education* made it illegal for public school systems to maintain segregated schools for black and white children, with the result that separate statistics ceased to be collected. The Coleman Report (1966), however, provides detailed information on the schools, the teachers, and the students at schools attended by "typical" white and black students. These data were collected in 1965 and thus characterize the educational experience of the most recent birth cohorts studied in this report—individuals reaching their twenties in 1980.

Comparing the Coleman results on teacher salaries and student-teacher ratios with the data for earlier periods reported in table 4.7 suggests there was continued improvement in resources devoted to black education between the mid-1950s and mid-1960s. In fact, teacher salaries and class size had become roughly equal for black and white children, except in the nonmetropolitan South, where small discrepancies lingered. However, the Coleman results also indicate that significant differences remained in other dimensions such as verbal test scores for teachers, availability of certain facilities, and special program availability.[23]

This discussion of school inputs has concentrated so far on primary and secondary education. The emergence of a substantial college-educated "elite" among blacks is a relatively recent phenomenon.[24] In 1940 only 2.5 percent of black males 25–34 years old had completed 4 years of college or more, in contrast to about 9 percent of white males. By 1980, 12 percent of young black males and over 30 percent of white males in this age group had completed college.

It is difficult to determine if the growth in college attendance was accompanied by an upward trend in the quality of higher education for blacks. Jones (1917) in his 1916 study of black education in the United States found only 1,643 black students at the college level in the South and about 500 in the North. Half of the students in the South were attending three well-regarded black institutions—Howard University, Fisk University, and Meharry Medical College. Possibly the rare few who reached college received relatively high quality educations.[25]

In more recent times, however, several factors would seem to have worked towards improving the quality of higher education available to the increasing numbers of black youth. These include: the shift

[22] Jones reports on all the school systems for blacks in the South and provides details on each of the secondary schools. Two samples of the curriculum offered at the secondary level follow. In Louisiana no public high schools were provided for blacks. Nonetheless, the few private high schools seem quite good. New Orleans College, a private elementary and secondary school for blacks in New Orleans provided the following program, as reported by Jones:

> The secondary work is divided into two courses, the "college-preparatory" course with 41 pupils and the "normal" course with 84 pupils. The "college-preparatory" course includes: Latin, 4 years; French, 2; mathematics, 3; English, 3½; elementary science, 2½; history, 1½; Bible, ½; and civics, ¼. The "normal" course comprises: Latin, 2 years; English, 3; mathematics, 3; elementary science, 2½; history, 1; psychology and education, 2. A small amount of time is given to practice teaching, music, physiology, agriculture, manual training, cooking, and sewing.

The one public high school for black students in Georgia (located in Athens) was described as follows:

> In accordance with the Georgia public school plan, the grades above the seventh are considered as the high school. These grades are well taught. The subjects are the same as those in the corresponding grades of the white high school—Latin, Greek, history, literature, mathematics, English, physics, and chemistry. Little departure is made from the college preparatory type of studies (Jones, 1917).

[23] The Coleman Report found that the average verbal test scores of teachers of black pupils was 87 percent the level of teachers of white pupils at the elementary level (91 percent at the secondary level). See the discussion in Welch (1973).

[24] See Freeman (1976) for a thorough treatment of this issue.

[25] The rare few, whether due to their own exceptional talents or to their schools, often made outstanding records. Amherst, for example, admitted 34 graduates of Dunbar High School (an outstanding black school in Washington, D.C.) between 1892 and 1954, and one-fourth of these graduates became Phi Beta Kappas. (See Sowell, 1974.) Also the *Negro Year Book* cites 40 black college graduates who made Phi Beta Kappa between 1900 and 1921, most graduating from leading schools, such as Yale, Williams, Dartmouth, Oberlin, Harvard, and the University of Chicago.

TABLE 4.8

Male Illiteracy Rate by Cohort and Race

Cohort			Percentage illiterate		
Birth year	Year reached age 10	Year reached age 40	Blacks	Whites	Difference
1840	1850	1880	74.8	8.0	66.8
1850	1860	1890	60.6	7.7	52.9
1860	1870	1900	43.0	6.3	36.7
1870	1880	1910	27.7	5.5	22.2
1880	1890	1920	22.0	5.3	16.7
1890	1900	1930	17.3	3.4	13.9
1900	1910	1940	14.1	2.0	12.1
1910	1920	1950	7.5	1.2	6.3
1920	1930	1960	6.1	0.7	5.4
1930	1940	1970	3.4	0.5	2.9
1940	1950	1980	1.7	0.4	1.3
1950	1960	1990	0.8	0.3	0.5
1960	1970	2000	0.4	0.3	0.1

Source: Smith (1984).

of blacks from the South to the North and West where access to high quality schools was less restricted, the integration of formerly all-white schools in the South, and the establishment of GI education benefits and then Federal grants and loans to low-income students, which eased financial obstacles to attending higher quality institutions. The extent to which these changes improved access for a larger proportion of the population as opposed to improving the quality of schooling received by those who attended is an open question.

In sum, the educational resources available to blacks increased enormously over the century, both in absolute terms and relative to white resources. Some portion of the increase in resources went towards increasing the number of grades completed by the average black person. But surely some portion also resulted in real improvements in school quality, at least during the period 1920 to 1953.

Measures of Educational Outcomes

The measures of schooling quality considered above refer to inputs to the educational process and not to educational outcomes—the skills attained in school. Several direct measures of educational output have been utilized to evaluate the effectiveness of education in enhancing skills. Two widely used measures are considered here: illiteracy rates and test scores.

Illiteracy Rates

The ability to read and write is primarily acquired in school and is basic to the performance of all but the least skilled jobs. Illiteracy rates are especially useful for evaluating black-white differences in skill among individuals in the earlier birth cohorts in the census data.

Table 4.8 is taken from Smith (1984) and reports illiteracy rates for individuals born in each decade since 1840. The table shows that illiteracy was still common among black men born in 1880 who, at age 60, were among the older members of the work force in 1940. Of this group, 22 percent were illiterate. This, however, represents a dramatic intergenerational gain, since more than 60 percent of the fathers of these men would have been illiterate. The fathers, born approximately in 1850 (most into slavery), were largely deprived of formal schooling as children. In contrast, illiteracy was fairly rare among whites born in 1880. It was similarly rare

among blacks of the same cohort living in the North and West.[26]

Illiteracy among blacks born between 1880 and 1910 was cut by a factor of three—from 22 percent to 7.5 percent. The rate continued to decline over the next 50 years, steadily eliminating the difference between whites and blacks. This pattern of convergence is consistent with the increasing school attendance of blacks reported above.

During the period of agrarian predominance, raw physical ability and basic skills acquired on the job were adequate to earn at least a subsistence level of income. However, as the Nation advanced industrially and technologically, demand increased for people to fill jobs requiring skills learned in school—reading, writing, and mathematical skills in particular. Today, a young illiterate person faces extremely limited employment opportunities. Given the general increase in schooling levels, illiteracy is now comparatively rare. Thus, for recent periods, the illiteracy rate is less useful for discerning racial differences in school-related skills, prompting a look at test scores for additional information.

Test Scores

In recent years, achievement testing has become widely used to evaluate the productivity of education as well as to assess the potential success of applicants for schools and jobs. As stated in the Coleman Report:

> These tests do not measure intelligence, nor attitudes, nor qualities of character. Furthermore, they are not, nor are they intended to be "culture free." Quite the reverse: they are culture-bound. What they measure are the skills which are among the most important in our society for getting a good job and moving up to a better one, and for full participation in an increasingly technical world. Consequently, a pupil's test results at the end of public school provide a good measure of the range of opportunities open to him as he finishes school—a wide range of choice of jobs or colleges if these skills are very high; a very narrow range that includes only the most menial jobs if these skills are very low. [Coleman, 1966, p. 20]

Achievement test scores, of course, reflect more than schooling. In fact, one prominent finding of the Coleman Report, as well as of many other studies of the determinants of achievement, is that the socioeconomic status of the parents, and other aspects of the student's environment outside of school, have a major influence on test performance.[27] On the other hand, measured school characteristics—such as the teacher's score on a verbal achievement test—have also been found to have important effects on student achievement, particularly for blacks.[28] Moreover, for purposes of assessing worker characteristics, it is useful to have a measure that captures cognitive skills, whether acquired at home, at school, or elsewhere. Such skills are by no means the only ones that influence earnings. Managerial skills, artistic ability, and physical dexterity are among the important skills that may affect earnings and typically are not measured well by achievement tests.

A series of nationwide tests has been administered to schoolchildren throughout the years. Table 4.9 summarizes the black-white gap in achievement test scores for several major nationwide tests given to students at different grade levels over the period 1960–1982.[29] There is no truly correct way to compare results of different tests given at different times. The test score gap in table 4.9 is expressed in terms of the standard deviation, which allows for a rough comparison. The overall impression from table 4.9 is that black children score about one standard deviation below white children over the entire period.

These results are not strictly relevant for interpreting earnings differences in our sample of data from the 1940–1980 censuses because results from tests administered in the 1960s are applicable only to the younger workers in the 1980 census data. For results applicable to older workers in 1980 and to

[26] The census of 1910 shows an illiteracy rate of 5.4 percent for blacks born in 1880 and living in the North (3.7 percent for those in the West). Although these rates are higher than those observed for native whites of the same cohort living in the North and West, they are substantially below the illiteracy rates of the foreign born of the same age, and are also lower than rates for native whites living in the South (see Department of Commerce, Bureau of the Census, 1918, chap. XVI).

[27] For example, see Coleman (1966) and the Plowden Report, similar to the Coleman Report, for Great Britain (Plowden, 1967). Bond discusses evidence from an earlier period (primarily the 1920s) showing a strong relation between parental economic status and student achievement. For example, in New Orleans, Negro children from professional families scored much higher than other children (Bond, 1966, pp. 352–56).

[28] Direct measures of teacher quality, such as teacher's scores on a verbal test, have been shown by Hanushek (1972) to have a significant effect on student achievement. The teacher's advanced degrees, years of experience, and pay have had mixed results, some showing effects and others not. However, the variation in pay and degrees is much smaller in the econometric studies (which refer to recent times) than the large differences in the South early in the century.

[29] With the exception of scores on the Graduate Record Examination, the reported gaps in standard deviations are taken from a study by Olneck (1985).

TABLE 4.9

White-Black Gap in Standardized Test Scores (in terms of total standard deviation)

Year	Sample	Grade	Test	Gap (standard deviation)
1960	Project TALENT	9	Composite	1.28
1965	EEOR (Coleman Report)	6	Verbal	1.00
		9	Verbal	1.00
		12	Verbal	1.01
1972	National Longitudinal Survey 1972	12	Composite	1.10
1980	High School and Beyond	10	Composite	0.96
		12	Composite	0.82
1980	SAT	11 & 12	Verbal	1.04
			Math	1.05
1980	Graduate Record Exam (GRE)	16	Verbal	1.28
			Quantitative	1.28
1982	High School and Beyond	12	Composite	0.96
		12 plus dropouts	Composite	0.93

Source: All entries except the Graduate Record Examination (GRE) score results are from data assembled by Michael Olneck (see Olneck, 1985). The GRE results are calculated from mean scores and standard deviations reported by race in Cheryl L. Wild, *A Summary of Data Collected from Graduate Record Examinations Test-Takers During 1979-80*, Data Summary Report II 15 (November 1981, Educational Testing Service).

those in earlier censuses, unfortunately, little information is available. Bond reports on a survey of the achievement of black children conducted by the Julius Rosenwald Fund in 1929–1931.[30] This survey covered third and sixth grade children in urban and rural counties in Alabama, Louisiana, and North Carolina. The average black student in these counties scored 0.75 years behind the national average in the third grade and 1.8 years behind in the sixth grade. Welch notes that the Coleman Report found southern black sixth graders to be 2.1 years behind the norm and estimates that third graders in the Coleman data were 0.9 years behind.[31] These comparisons do not suggest any narrowing in the achievement gap over this period.

Recent data, however, indicate a convergence in test scores. The National Assessment of Educational Progress evaluates the extent to which students have learned commonly taught material. The assessment shows that black youths made gains in reading and mathematics performance at most age levels in the period between 1972 and 1981. Whites progressed little and in some cases declined, and as a result the gap narrowed.[32] Since 1975 black students have also gained relative to white students on the Scholastic Aptitude Test (SAT). (White SAT scores have been declining for several years.) Nonetheless, in 1984 the average black score was, on both the verbal and quantitative parts of the SAT, approximately at the 16th percentile in the white distribution of scores, leaving a substantial differential.[33]

The achievement tests reviewed above are given to children midway in their schooling. Students drop out, however, at different stages, and black students drop out earlier than white students. Since those with lower scores are more likely to drop out, the pattern of scores by race among adults who have completed different levels of schooling is likely to differ from what is observed among children in a given grade.

More relevant, therefore, is the Armed Forces Qualification Test (AFQT), which has been used by the armed services for many years to test individuals for the purposes of induction and placement. Those taking the test have usually completed their schooling (although some return with the G.I. Bill). Table 4.10 shows mean scores on the AFQT by race and by years of education for men ages 19–21 at two periods in time—the middle 1950s and 1980. Data for the 1950s were obtained from a 50 percent sample of the records of all individuals (0.75 million men) who were called up for the draft or attempted to enlist during the period January 1953 to July 1958.

The Department of Defense contracted with the National Opinion Research Center to administer the AFQT in 1980 to a nationally representative sample (close to 12,000 men and women).[34] The results of this test were tabulated for men at the same age and educational levels as shown for the 1950s data. The two tests are comparable, although the contents have changed somewhat over time.

The AFQT is an achievement test, and like other such tests, it reflects the quality of schooling received as well as family socioeconomic status and other factors. Bond reported, in discussing results by race for a forerunner of the AFQT—the Army Alpha test given to World War I recruits—that black soldiers from the North made higher scores than the white soldiers from certain Southern States, suggesting the significant effect of school quality and economic status.[35]

As is evident in the table, AFQT scores are highly correlated with schooling for both black and white men. But the test scores of black men are lower than those of white men at each schooling level. Moreover, the results are remarkably similar for the two points in time. Although a narrowing in black-white gap is evident for groups with less than 3 years of high school, there has been no narrowing for those 3 years or more of high school. The vast majority of both black and white young men are now at these higher levels. Studies by the Defense Department have also examined changes in AFQT test scores over time and have also found that the black-white differential in test scores has remained approximately the same since the end of the Korean war.[36]

[30] See Bond (1966), pp. 337–51. The test administered was the Stanford Achievement Test.

[31] See Welch (1973) p. 71.

[32] See Congressional Budget Office, *Trends in Educational Achievement* (April 1986), app. E.

[33] Ibid.

[34] For a discussion of this test, see Office of the Assistant Secretary of Defense, *Profile of American Youth: 1980 Nationwide Administration of the Armed Services Vocational Aptitude Battery*, (March 1982).

[35] See Bond (1966).

[36] See Office of the Assistant Secretary of Defense, 1982, in particular, pp. 34–35; Eitelberg, 1981

TABLE 4.10

Mean AFQT Percentile Test Scores of Men Ages 19-21 by Race and Education

Years of school completed	1953-58		1980		Difference	
	Black	White	Black	White	1953-58	1980
Elementary						
5-6	7.7	15.4	4.5	7.3	7.7	2.8
7-8	12.4	28.1	9.4	14.9	15.7	5.5
High school						
1-2	19.1	40.4	14.0	30.4	21.3	16.4
3-4	32.2	57.2	19.4	46.5	25.0	27.1
College						
1-2	46.3	70.9	39.2	65.8	24.6	26.6
3-4	50.6	76.9	49.7	80.2	26.3	30.5

Note: Mean percentile scores on the Armed Forces Qualification Test (AFQT) for 1953-58 are based on data obtained from a 50 percent sample (0.75 million men) of the records of all individuals called up for the draft or attempting to enlist between 1953 and 1958. Scores for 1980 are based on the results of the AFQT administered by the Defense Department to a national sample of youth.

Sources: 1953-58, D. O'Neill (1970). 1980, data tabulated by USCCR staff from the U.S. Department of Labor's National Longitudinal Survey of Youth.

Relation Between School Achievement and Earnings

There is reason to believe that the differences in scores are capturing, to some extent, real differences in market productivity. Economists have investigated the effect of adjusting for differences in ability on estimates of the rate of return on schooling. The studies find a strong correlation between test scores (usually the AFQT) and later earnings for individuals with the same schooling level. The results, however, are sensitive to the method used to adjust for differences in schooling, region of residence, and family background. Zvi Griliches and William Mason (1972) estimate that a 30 percentile increase in AFQT score increases weekly earnings by 4.6 percent, adjusting for education, age, and amount of military service. Adjusting only for schooling obtained *after* the tests were administered doubles the estimated effect. Adjusting for father's education and occupation reduces the effect by as much as a third. Accounting for the "noisiness" of test scores can increase the effect of ability by a factor of three or more.[37] John Hause (1972) investigates the interaction of ability, schooling, and experience as they influence earnings. After adjusting for earnings differences due to father's education, religion, marital status, and region, he estimates that a one standard deviation on an aptitude test score increases earnings 3.9 percent for high school graduates and 6.6 percent for college graduates.[38] [39] [40]

The reason for the sensitivity of the results is that background characteristics such as father's occupation and education affect the acquisition of those skills the AFQT is designed to measure. If the effects of background characteristics on skill are taken into account, the estimated effect of AFQT score will be muted because the effect of skill differences is then shared between AFQT and the background characteristics. For this reason, the estimates reported above understate the extent to which AFQT accounts for racial differences in earnings when only standard variables, such as schooling, are held constant.

Social scientists do not agree on how those skills reflected in aptitude and achievement test scores are later reflected in increased job productivity and earnings, and further investigation beyond the scope of this report is warranted. Two points do recur frequently. First, test scores reflect the quality of earlier educational experiences both in school and at home. Second, the skills reflected in test scores do not substitute for, but complement later formal education and training. The research of Hause (1972) suggests that individuals who have achieved more in their early schooling benefit more in earnings from continuing formal education and from on-the-job training. The importance of the first point is that it suggests that racial differences in years of schooling are likely to understate racial differences in skills acquired both at home and in school. The importance of the second point is that the effect on earnings of racial differences in the quality of schooling and family background is likely to grow over an individual's working life. Blacks and whites who do not acquire learning skills in their early education will find it difficult to benefit from higher levels of education and on-the-job training. For example, a recent study by the Congressional Budget Office finds those who score more highly on the AFQT are more likely to pass qualifications tests for

[37] The sample Griliches and Mason (1972) use is quite small and has a small representation of blacks. It consists of 1,454 post-World War II veterans of whom only 4 percent are black. However, in their sample, the black-white earnings differential is essentially eliminated after adjusting for ability purged of its noise, schooling obtained after the ability tests were administered, age, and amount of military service.

[38] A one standard deviation difference in test score does not represent a constant difference in percentiles. For instance, for an individual at the 50th percentile, a one standard deviation higher test score would increase his rank to the 85th percentile, a 35 percentile increase. However, for an individual at the 70th percentile, a one standard deviation increase would increase his rank to the 92nd percentile, a 22 percentile increase. This makes it difficult to compare results from studies that measure test scores in standard deviation units, such as Hause (1972), to those that use percentile units, such as Griliches and Mason (1972). Intelligence or IQ test scores are generally reported in standard deviation units—15 points is one standard deviation—and the AFQT is reported in percentile units—one point is one percentile.

[39] Hanushek (1973) estimates within regions that a 30 percentile increase in AFQT score increases earnings by 3.6 percent after adjusting for schooling. Kiker and Liles (1974) estimate that the same change increases earnings approximately $4.80 per week in a sample of individuals whose average weekly earnings were $135 in 1970. D. O'Neill (1977) estimates the same change would increase the weekly earnings by $7.50 and $1.75 in 1974 and 1969, respectively, in two sample of veterans participating in vocational training. He also shows that the same change increases the *growth* in earnings by about $1.25 per week per year. D. O'Neill finds that within AFQT categories blacks are more likely than whites to participate in vocational training, and they benefit from it more than whites.

[40] There is little evidence on racial differences in the relationship between test scores and earnings. Hanushek (1973) estimates that a 30 percentile increase in AFQT score would increase the weekly earnings of blacks by only 1.5 percent as opposed to 3.6 percent for whites. On the other hand, Kiker and Liles (1977) report results that indicate that the relationship for blacks is very similar to the one among whites.

various occupations (particularly higher skill occupations) and are promoted more quickly.[41]

Limitations in each of the studies of the relationship of test scores and schooling to earnings, however, make it difficult to assess the actual magnitude of the effect.[42] The finding that the differential in achievement scores for a given level of schooling has not changed between the mid-1950s and 1980 suggests that either the differential quality of schooling remained roughly constant over the period or that other factors offset any improvement. However, the data on school resources reviewed above suggest that prior to the 1950s, and therefore for older cohorts, there was a convergence in school quality.[43]

Summary of Racial Differences in Educational Attainment

The discussion above has described the important changes in educational attainment of black and white males from the late 19th century to the present. The principal finding is that blacks have made enormous gains in educational attainment, sharply narrowing the gap with whites in years of school completed. These achievements are even more remarkable given the large proportion of black Americans living in the impoverished rural South during the post-Civil War era and given their lack of political power during disfranchisement when State and local governments denied blacks adequate schooling. Despite these bleak origins, the increase in schooling early in the century succeeded in sharply reducing illiteracy among blacks.

It is clear that public resources allocated to the schooling of black children increased substantially over time and that a significant narrowing in the black-white gap in school resources occurred during the 1920–1953 period. Some of the relative increase in school resources for blacks went towards increasing the number of months and years of school attended (as reflected in grades completed), and some led to improvements in the quality of a given number of grades completed. There is no reliable way to determine whether the convergence in racial differences in school inputs over the 1920–1953 period was in fact matched by a comparable convergence in the knowledge and skills schools are supposed to provide. No series of national level test score results is available to make such an assessment. The differentials in resources in earlier years, however, were so large that it is hard to believe that differences in school effectiveness did not narrow along with the sharp convergence in school resources.

Although school quality differences as measured by test score results may not have narrowed significantly since 1960, it should be noted that all of the age groups in our data sample, with the exception of those aged 25–34 in 1980, would have completed the bulk of their schooling prior to 1960. Thus, successive cohorts in this study would have received their schooling over the period of convergence in school resources and, probably, convergence in quality. As a result years of schooling likely understates true gains in education, since this measure does not incorporate the change in school quality.

In evaluating the effect of education on earnings, two key questions are raised: Can the lower educational attainment of blacks account for much of the racial difference in earnings? And, do the trends in educational attainment account for much of the convergence in the black-white earnings gap since 1940? We now turn to census data to provide a preliminary assessment of the effect of years of school on earnings.

The Effect of Racial Differences in Schooling on Racial Differences in Earnings

Differences in education have been identified as a possible reason why black men earn less than white men. Therefore, earnings ratios for black and white men with the same level of schooling should generally be higher than the earnings ratio computed for all levels of schooling combined. The presumption is confirmed in table 4.11, which shows

[41] Congress of the United States, Congressional Budget Office, *Quality Soldiers: Costs of Manning the Active Army* (June 1986).

[42] All studies of the relationship between test scores, schooling, and earnings are plagued by the lack of data. The samples are generally nonrandom. For instance, the Thorndike-NBER sample used by Hause (1972) and Lillard (1977) is a sample of individuals of high ability and good health. The samples are often small. The 1964 CPS sample used by Griliches and Mason consisted of only 1,454 men of whom only 4 percent were black. The earnings data are often inadequate. The samples used by Kiker and Liles (1974) and by Hanushek (1973) had earnings information at a point only 10 months after the individuals separated from the Army. It should be noted that, considering the large differences in the type of samples used, the estimated effects of ability on earnings are remarkably similar.

[43] The comparison between the Rosenwald and the Coleman data casts some doubt on such a change, but the Rosenwald data are quite limited in scope and are not really comparable with the large-scale Coleman results.

black-white ratios of weekly earnings by schooling level, for selected age groups in each year. Within each age group, these ratios are generally higher than the ratios calculated for the larger group of all schooling levels combined. For instance, the earnings ratio for all men ages 25–34 was 79.4 percent in 1980 while the ratios at specific schooling levels ranged from 80.5 to 91.5 percent. Because the quality of schooling as reflected in achievement levels has been lower for blacks than for whites, years of schooling alone do not fully capture educational differences. Thus, the wage gap that remains after adjusting for schooling is likely to be partly attributable to qualitative differences.

Although the ratios are higher within schooling levels, the basic trends in these ratios are usually close to the year to year pattern observed in the aggregate ratios. Thus, the convergence in years of schooling alone does not appear to explain a large amount of the observed narrowing in the earnings differential from 1940 to 1980.

What, then, does account for the trend in the earnings ratios, which rose substantially over time even within detailed schooling and age categories? One explanation is that real educational gains are not fully captured by years of school completed. Schooling levels were not accurately reported in the earlier decades by blacks because they attended ungraded schools. As a result, grades of school completed are likely overstated among blacks, particularly those born before 1910, and the gains in schooling over time are thus understated. Similarly, the likely rise in school quality among blacks, at least up until the 1950s, leads to a further understatement of the true gain in education. Of course, factors other than education probably contributed to the rise in black-white earnings ratios. Various possibilities are considered in subsequent chapters.

A final point pertains to the level of the earnings ratio itself and the extent to which it can be attributed to discrimination. The discussion of differences in the qualitative aspects of schooling suggested that years of schooling alone may not be sufficient to adjust for racial differences in skills learned in school. Studies that have attempted to adjust black-white earnings ratios for differences in achievement have concluded that a significant part of the wage gap within schooling groups can be attributed to such achievement. B.F. Kiker and W. Pierce Liles (1974) estimate that more than half of the gap can be accounted for by adjusting for differences in schooling and AFQT scores.[44] Eric Hanushek (1973) uses similar data but calculates that within 26 urban regions, only 17 percent of the wage gap can be accounted for by differences in schooling, work experience, and AFQT scores between blacks and whites.[45] [46] Both of these studies are marred by the availability of earnings data only 10 months after the individuals separated from the military. The relationship of AFQT scores to earnings is most evident many years after the tests were taken.[47]

Work Experience and On-the-Job Training

After the completion of formal schooling an individual's skills continue to develop through training obtained on the job. Training may take any number of forms, ranging from organized programs to informal training, or "learning from experience" (Mincer, 1962). On-the-job training, like schooling, is an investment in "human capital" that develops skills and enhances earnings. The worker often pays for this training in the form of lower wages during the training period.[48] After the training period, earnings are expected to rise, reflecting the increase in productivity.

Black-white differences in on-the-job training, just as differences in schooling, are expected to affect the earnings gap. A black-white differential in training

[44] Kiker and Liles (1974) employ a large sample of men who left the Army in fiscal year 1969. In this sample blacks earn 11.3 percent less than whites. Adjusting for differences in years of school reduces this difference by only 0.9 percentage points. However, adjusting by AFQT score (in addition to schooling) reduces this difference by an additional 6.8 percentage points, or more than half of the wage gap.

[45] Hanushek (1973) does not separate AFQT scores from other determinants of earnings—schooling, experience, and region. He also calculates that 72 percent can be accounted for by racial differences in the payments received for these characteristics.

[46] Also see D. O'Neill (1970, 1977) and Masters (1975).

[47] In addition, it is not clear how the results were affected by excluding those who returned to school after leaving the military. The average AFQT score is almost certainly higher for students than workers. The earnings of the students, had they chosen to work, may have been higher, as they had achieved greater skills in the past, or may have been lower, as they found it worthwhile to return to school.

[48] When on-the-job training produces skills that are specific to the employer and have no market value elsewhere, the employer is more likely to pay for the training. The worker's earnings, therefore, would not rise as much after the training period. They would rise enough to keep the worker from leaving so the employer would not lose the investment. See Becker (1975) for a more complete discussion of specific and general training.

TABLE 4.11

Black-White Ratios of Weekly Wage and Salary Earnings by Age and Education

Age and years of school	1940	1950	1960	1970	1980
25-34					
0-7 yrs.	59.0	72.3	69.5	75.2	91.5
8-11	62.3	75.1	71.6	75.9	81.6
12	61.9	74.2	69.8	77.4	80.5
16+	61.2	73.0[a]	69.9	82.0	87.0
Total[1]	48.9	66.4	63.7	71.7	79.4
35-44					
0-7	56.2	69.5	69.6	74.7	83.3
8-11	58.1	74.7	72.9	72.7	77.5
12	50.9	72.4	67.8	73.7	78.5
16+	34.4[a]	61.5[a]	61.4	70.4	74.2
Total[1]	43.0	60.6	59.5	63.3	70.8
45-54					
0-7	51.9	65.6	68.6	73.9	83.9
8-11	56.4	67.4	69.1	74.8	79.1
12	42.4	63.3[a]	63.7	70.4	78.5
16+	26.4[a]	44.0[b]	52.8	65.3	70.1
Total[1]	40.2	56.1	56.2	60.5	68.2

[1] Total includes those with 13-15 years of schooling, not shown separately.
[a] Sample of fewer than 100 persons.
[b] Sample of fewer than 50 persons and is not a reliable estimate.

Source: Census of Population, 1940-1980, Public Use Sample.

could arise because of differences in schooling: evidence suggests that those with more education also tend to obtain more training.[49] Discrimination, however, may also limit blacks' access to training. On-the-job training typically involves the participation of the employer who, because of prejudice, may deny blacks entry to occupations and activities that promote skill accumulation. The belief that blacks are relegated to "dead-end" jobs is, in effect, a statement that blacks are barred from jobs with a high component of training that increases skills and earnings.

Data reporting on-the-job training directly are seldom collected. Economists, however, have inferred the extent of these training investments by reference to the rise in a worker's earnings as years of work experience increase. It is expected that the greater the investment in training, the greater the rise in earnings.[50]

Using age as a rough proxy for work experience, census data can be examined to determine whether the earnings of black men increase with work experience at the same rate as the earnings of white men. There are two ways to observe the effect of age on black-white earnings ratios. One is to follow black-white earnings ratios across age groups in a given year; the second is to follow the same cohort as it ages from one decade to the next. Both methods can be applied to the data in table 4.12.

The first or "cross-section" method compares black-white earnings ratios within an education group for a given year. Moving down a column in table 4.12 shows the change in weekly earnings ratios when younger workers are compared with older, more experienced workers. Proceeding in this way generally reveals a pattern of declining relative earnings for more highly educated blacks as they age. This effect, however, is only apparent among high school and college graduates and is minimal among those with 8–11 years of school. For example, in 1970, among college graduates, the black-white earnings ratio falls from 82.0 percent to 58.5 percent over the 30-year span between ages 25–34 and ages 55–64. The decline in ratios for high school graduates over the same ages was 77.4 percent to 68.4 percent, while for those completing 8–11 years of school, the decline went from only 75.9 percent to 74.9 percent.

These declines may be interpreted as evidence that discrimination dampens investment in training over a worker's life cycle. One problem with this conclusion, however, is that it relies on a comparison across different cohorts of workers, born in different periods and each having unique histories. Thus, the lower earnings ratio of men aged 55–64 in 1960 (among those with 12 years of school) may simply reflect the overstatement of years of school of blacks born at the turn of the century who attended largely ungraded schools (see above) as well as lower quality schooling or other factors specific to the cohort.

For this reason several analysts have suggested that a more appropriate way to examine the effect of age or work experience on the earnings of blacks and whites is to trace a cohort as it ages (Council of Economic Advisers, 1974; Smith and Welch, 1977). This can be done by reading across the diagonals in table 4.12.

This procedure reveals a strikingly different pattern, as the black-white earnings ratios usually rise between census years, except between 1950 and 1960 when the ratio falls for all birth cohorts in all schooling groups. (The other exception is found for the cohort of college graduates aged 25–34 in 1970.) These results show that blacks typically have experienced as great an earnings gain as whites over the life cycle. But one cannot conclude that blacks and whites receive the same amount of training, because the gains made by a cohort as it ages are affected by temporal forces in the economy and in the legal environment as well as by work experience.

Some supplementary information provides additional insight into training and skill building. A study by Mary Corcoran and Greg Duncan (1978) used the Panel Study of Income Dynamics to estimate the effect of work experience on the earnings of black and white men. Their data contained detailed measures of actual work experience divided into specific

[49] See the theoretical treatment by Becker (1964) and the estimates by Mincer (1962) showing a positive correlation between schooling and on-the-job training. Other direct evidence of such an effect comes from a study by D. O'Neill (1977) showing that those who took additional training under the G.I. Bill were likely to have more prior schooling than those who did not. J. O'Neill (1983), using the National Longitudinal Survey of Young Men, finds a positive relationship between education and the months of specific vocational training required for current job.

[50] The steeper rise of earnings with work experience when training is involved results from the presumption that earnings are depressed during the initial period of investment and then rise due to the enhanced productivity after the training. (Becker, 1957)

TABLE 4.12

Black-White Ratios of Weekly Wage and Salary Earnings by Education and Age

Education and age	1940	1950	1960	1970	1980
8-11 yrs. of school					
25-34	62.3	75.1	71.6	75.9	81.6
35-44	58.1	74.7	72.9	72.7	77.5
45-54	56.4	67.4	69.1	74.8	79.1
55-64	56.3	69.3	66.3	74.9	79.6
12 yrs. of school					
25-34	61.9	74.2	69.8	77.4	80.5
35-44	50.9	72.4	67.8	73.7	78.5
45-54	42.4	63.3[a]	63.7	70.4	78.5
55-64	34.3[a]	46.8[a]	56.1	68.4	75.8
16+ yrs. of school					
25-34	61.2	73.0[a]	69.9	82.0	87.0
35-44	34.4[a]	61.5[a]	61.4	70.4	74.2
45-54	26.4[a]	44.0[b]	52.8	65.3	70.1
55-64	24.8[b]	59.8[b]	46.0[a]	58.5	67.0

[a] Sample of fewer than 100 persons.
[b] Sample of fewer than 50 persons and is not a reliable estimate.

Source: Census of Population, 1940-1980; Public Use Sample.

segments such as years of training and post-training experience on the current job. Blacks in the sample received less on-the-job training than whites. However, they averaged 1.9 less years of formal schooling than whites. Because on-the-job training increases with schooling, it is likely that schooling differences account for some portion of this training differential, although clearly discrimination in terms of access to training may also play a role.

The Corcoran-Duncan study also estimated the payoff from an additional year of work experience or training and found that the reward from training time is no lower for blacks than for whites. These results suggest that discrimination may not affect the return from additional on-the-job training although it could impede the acquisition of skills. The implications of the Corcoran-Duncan study for the relation between age and earnings are that the earnings of blacks would not rise as fast with age as those of whites because blacks receive less "total" training (years of training times the return from training).

Concluding Comments

There is evidence that blacks hold less skilled jobs than whites.[51] Part of this difference is undoubtedly linked to the lower educational attainment of blacks, which not only affects skills directly but also does so indirectly by affecting the amount of training provided on the job. But training differences may also arise due to other factors, including discriminatory treatment.

Racial differences in skills developed on the job have likely narrowed, which may account for some of the convergence in the earnings gap. Educational gains no doubt have enhanced blacks' opportunities for training, but declining discrimination may also have contributed.

[51] Classifying professional, technical, managerial, and craft workers as skilled, in 1980, among 35–44 year olds, 60 percent of white workers and 36 percent of black workers were skilled. These data are based on tabulations from the microdata file of the 1980 census.

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Chapter 5

Geographic Migration and Other Sources of the Wage Gap

This chapter discusses the effect of geographic region and migration, of industrial sector, and of marital status on the earnings of black and white men and on the trend in the earnings differential.

Geographic Location and Migration

The fact that a disproportionate share of the black population lives in the South, where wages have historically been low, accounts for some of the gap in earnings between black and white men. Furthermore, the large-scale migration of blacks from the low-wage South to the high-wage North, which lasted through the 1960s, raised average black wages and contributed to narrowing the wage gap. This section examines these assertions.

The concentration of blacks in the South is apparent from the regional distributions of white and black populations presented in table 5.1. In 1940 more than three-fourths of the black population lived in the South, and even in 1980, despite decades of outmigration, more than half still were found in the South. The fraction of whites in the South, in contrast, grew from roughly 25 percent in 1940 to 31 percent in 1980.

Differences in earnings between the South and non-South for men ages 25–34 are presented in table 5.2. Earnings are lower in the South at all educational levels, but the difference is generally much larger among workers with fewer than 12 years of school and is much larger for blacks than whites. It is also apparent that regional earnings differences have narrowed over time. By 1980 between-region differences were no longer as important a factor in explaining black-white differences in earnings as they had once been.

The migration of blacks from the rural South to the industrial centers of the North is one of the most important demographic phenomenons of this century. Between 1910 and 1970, the fraction of blacks who lived in the North quadrupled from roughly 10 percent to nearly 40 percent (see table 5.1).[1] This shift, together with migration to the West, reduced the proportion of blacks living in the South from 89 percent in 1910, to 77 percent in 1940, and to 53 percent by 1970. In comparison, the regional distribution of whites changed more modestly over this period as the North lost population and the West gained.

[1] The higher incomes obtained from industrialization in the North predate the exodus of blacks from the South that occurred after 1940 and raise the question of why stronger migration was not observed earlier. The high rate of illiteracy in the post-Civil War period, the isolation of blacks in rural areas, and the lack of information and finances needed to move are obvious factors. In addition, until the outbreak of World War I, the inflow of foreign immigrants may have been an impediment to black migration to northern urban centers. However, during the war foreign immigration slowed sharply, and after the war legal barriers to immigration were erected. Thus, between 1914 and 1929, with blacks having attained much more schooling and resources, improving job opportunities attracted significant numbers to the North. Between 1910 and 1930, the share of blacks living in the North doubled from 10.4 percent to 20.3 percent. This flow was suspended during the Great Depression, which hit manufacturing especially hard.

TABLE 5.1

Regional Distribution of Racial Groups

Year	Black				White			
	NE	NC	South	West	NE	NC	South	West
1890	3.6	5.7	90.3	0.4	31.1	39.8	23.9	5.2
1900	4.4	5.6	89.7	0.3	30.9	38.6	24.7	5.8
1910	4.9	5.5	89.0	0.5	31.0	35.8	25.1	8.0
1920	6.5	7.6	85.2	0.8	30.5	35.0	25.5	9.0
1930	9.7	10.6	78.7	1.0	30.1	33.7	25.1	9.8
1940	10.7	11.0	77.0	1.3	29.2	32.7	26.8	11.3
1950	13.4	14.8	68.0	3.8	27.7	31.2	27.3	13.8
1960*	16.1	18.8	59.9	5.8	26.1	30.2	27.4	16.3
1970	19.2	20.3	52.0	7.5	24.9	29.1	28.4	17.6
1980	18.3	20.1	53.0	8.5	22.3	27.1	31.3	19.3

*First year to include Alaska and Hawaii.

Sources: U.S. Bureau of the Census: *Historical Statistics of the U.S. Colonial Times to 1970*, Series A172-194, p. 22; *Statistical Abstract 1982-83*.

TABLE 5.2

Rates of Net Migration from the South for Men Ages 20-24

	Black	White
1940-50	26.3%	1.8%
1950-60	24.5	8.4
1960-70	19.3	3.3
1970-80	2.1	−1.3

Note: These rates were calculated by comparing the share of males ages 20-24 years old living in the South in year *t* to the share of males ages 30-34 years old living the South in year *t* + 10.

Migrants typically are young.[2] Net migration rates from the South (see table 5.2) for the particularly mobile group of young men ages 20–24 illustrate more clearly the exodus that took place among blacks from the 1940s through the 1960s. On balance there was a net loss of about 25 percent of black men in the South in each of the decades between 1940 and 1960 and an additional 19 percent drop during the 1960s. These figures also show that net losses of blacks in the South came to a virtual halt during the 1970s. It was the first decade of the century, in fact, that the share of blacks living in the South did not decline. In contrast, while many whites left the South, even more came in. Net changes in the white population during this entire period were modest, underscoring the point that large net outflows from the South were a distinctly black phenomenon.

The reasons for the substantial South-North flow of blacks are readily surmised. First, the pecuniary gain from migration was undoubtedly large. According to table 5.3, a black male (aged 25–34) with 0–11 years of school in 1940 might increase his income by 66 percent if he moved from South to North.[3] A white male of the same age and with the same schooling could increase his earnings by half that amount. The larger regional differentials in earnings for blacks than for whites may reflect greater discrimination in the South with respect to both pay and opportunities for occupational advancement. It may also reflect the relatively higher wages for unskilled labor in the North than in the South, since blacks were in less skilled jobs within a schooling level.

Aside from monetary reasons, a second factor motivating blacks to leave the South is likely to have been the widespread legal discrimination in all areas of life that existed for blacks in the decades before the Civil Rights Act of 1964. Unequal access to schooling and other governmentally provided services as well as the strict segregation of public facilities undoubtedly provided an added impetus for blacks to move northwards.

Migration of blacks to high-wage areas in the North is expected to have raised black earnings relative to white earnings. On the other hand, several factors were at work that generated faster improvement in the relative position of blacks in the South than in other regions. Among these are relative gains in educational attainment and school quality in the South, and a decline in legal segregation. In addition, the large outflow of blacks reduced the supply of labor to occupations and industries that blacks had filled, and this would have put upward pressure on wage rates. Table 5.4 shows that black-white earnings ratios, although still somewhat lower, have grown much more rapidly in the South than in other regions. Between 1970 and 1980, for example, relative earnings grew by more than 9 percentage points in the South but less than 4 percentage points outside the South. As a result, differences in the earnings gap between the South and the rest of the country have narrowed considerably over the years.

Summary

Historically, an important reason for low relative earnings among black males has been the disproportionately heavy concentration of the black population in the South where wages are low in comparison with other areas. Net migration of blacks from the South to the high-wage urban areas of the North between 1940 and 1970 is believed to have reduced the earnings gap. Net migration flows during the 1970s were essentially zero. Moreover, the more rapid economic growth in the South relative to other regions has gradually narrowed the North-South earnings gap, especially among blacks. Consequently, the effect of southern location on both the earnings gap and trends in the gap was considerably less important after 1970.

[2] Older workers are less likely to migrate because the payoff from geographic migration falls with age. Accumulated work experience typically generates a payoff that is specific to a worker's firm or locality and is not easily transferred from one place to another. Moreover, older workers have fewer years left in the work force than the younger ones and thus accrue smaller lifetime benefits from moving to a better job. In addition, the cost of migration rises with age. Older workers have established close bonds to their communities, creating a psychic cost to moving, and they tend to be tied to larger families, which imposes a higher monetary cost to moving.

[3] This is likely to overstate the gain. The cost of living may have been lower in the South. Agricultural workers, who were more concentrated in the South, received income in kind (such as food or housing), which would not be reflected in the incomes reported. Differences in skill between northern and southern workers (for example, due to differences in school quality) may further account for some of the differential. Nonetheless, given the substantial differential observed, it is probable that blacks could increase their incomes significantly by moving from the South to the North.

TABLE 5.3

Annual Wage and Salary Earnings of Men Ages 25-34 by Race, Region, and Education

Year and education	White			Black		
	South	Non-South	North-South gap[1]	South	Non-South	North-South gap[1]
1940						
0-11	788	1,033	31.1	433	717	65.6
12-15	1,309	1,362	4.0	647	896	38.5
16+	1,819	1,866	2.6	906	1,269	40.1
1950						
0-11	2,192	2,597	18.4	1,338	2,073	54.9
12-15	2,925	3,007	2.8	1,785	2,220	24.4
16+	3,202	3,355	4.8	2,255	2,414	7.1
1960						
0-11	3,614	4,476	23.9	2,163	3,398	57.1
12-15	4,727	5,310	12.3	2,832	3,787	33.7
16+	5,912	6,352	7.4	3,678	4,631	25.9
1970						
0-11	5,953	7,201	21.0	4,151	6,031	45.3
12-15	7,703	8,536	10.8	5,432	6,918	27.4
16+	9,813	10,120	3.1	7,064	8,838	25.1
1980						
0-11	11,100	11,529	3.9	8,759	9,585	9.4
12-15	14,354	15,298	6.6	10,989	12,486	13.6
16+	17,778	17,788	0.1	14,398	15,699	9.0

[1]Percentage by which earnings in non-South exceed earnings in the South.

Source: Census of Population 1940-80, Public Use Sample.

TABLE 5.4

Black-White Weekly Wage and Salary Ratios by Region and Age

	1940	1950	1960	1970	1980
South					
25-34	47.4	59.4	57.6	65.6	77.1
35-44	40.9	54.5	52.2	57.8	67.9
45-54	36.5	50.6	50.2	53.7	63.4
55-64	34.9	53.4	46.5	53.6	59.2
Non-South					
25-34	66.9	79.4	74.0	80.2	84.9
35-44	55.4	73.8	70.0	71.0	76.1
45-54	51.9	66.8	68.1	70.1	75.1
55-64	53.1	67.5	68.2	70.8	74.1

Note: Tabulations based on wages and salaries of individuals who worked in the preceding calendar year. Self-employed and unpaid family workers are excluded.

Source: Census of Population, 1940-1980; Public Use Sample.

Industrial Sector

This section examines trends in employment across the three broad industrial sectors—agriculture, private nonagriculture, and government—and trends in earnings and racial differences in earnings within and between these sectors. It is well known that agricultural employment, as a fraction of the total, has been falling since the 19th century, and precipitously during the early decades of this century. Since blacks were largely located in the rural South, this change in agricultural employment plays a particularly important role in their economic history.

Among whites, the proportion in agriculture fell from 20 percent to 4 percent between 1940 and 1980, with most of the decline coming in the first half of this period (table 5.5). Among blacks, the decline in agricultural employment was an exodus (table 5.6). In 1940 about 38 percent of all black males were employed in agriculture; by 1980 less than 3 percent were so employed.

In discussing migration, it was noted that older individuals are generally less mobile than the young. The same basic arguments apply to industrial mobility. Workers typically accumulate skills and employment ties that are specific to their occupation and industry, if not their employer, which means that experienced workers will generally require a stronger incentive to move into a new industry than recent entrants. In this light, the forces that caused the decline in agricultural employment were indeed powerful. Not only did a greater fraction of young workers enter nonagricultural employment, but older workers made midcareer switches into nonagricultural jobs. This point can be demonstrated by tracking the agricultural employment of experienced workers over time. For example, the share of 35–44 year old workers employed in agriculture in 1940 can be compared with the share of this cohort remaining in agriculture 10 years later when they were 45–54 years old. Table 5.7, using 35–44 year olds as the base group in each year between 1940

TABLE 5.5

Distribution of White Male Labor Force by Sector and Age

	1940	1950	1960	1970	1980
Agriculture					
25-34	16.1	10.8	5.6	3.3	3.3
35-44	16.1	11.9	6.6	4.2	3.6
45-54	19.4	13.6	8.6	5.2	4.2
55-64	25.4	16.3	10.4	7.7	5.3
Total	19.5	13.5	7.9	5.1	4.3
Private nonagriculture					
25-34	75.3	79.7	83.4	82.9	82.6
35-44	74.4	79.3	82.1	81.7	81.3
45-54	71.6	77.2	80.3	79.5	79.7
55-64	66.5	74.4	78.4	78.0	78.6
Total	71.9	77.9	81.6	81.3	82.1
Government					
25-34	8.6	9.5	11.0	13.8	14.1
35-44	9.5	8.8	11.3	14.1	15.1
45-54	8.9	9.2	11.1	15.4	16.2
55-64	8.1	9.3	11.2	14.3	16.1
Total	8.6	8.6	10.5	13.6	13.5

Source: Census of Population, 1940-1980, Public Use Sample

and 1970, shows the percentages of agricultural workers leaving agricultural employment over the next decade.

As agricultural employment declined, jobs increased in private nonagricultural industry and substantially in government (defined as Federal, State, and local employment). Moreover, growth in government employment has been considerably more rapid among black men than among white men. In 1940, for example, only 6 percent of black and 9 percent of white men were employed in the government sector. By 1980 these percentages had increased to about 23 percent for blacks and 14 percent for whites. All other workers are included in the private nonagricultural sector. Of all the sectors, the private nonagricultural sector is the largest, and its relative size has generally increased over time with the expansion of services and industrial production and the contraction of demand for agricultural labor.

The relatively large concentration of black workers in low-paying agricultural jobs accounts for some of the black-white differential in earnings, especially before the 1960s. Moreover, shifts in employment away from agriculture have apparently moved workers, particularly blacks, into higher paying jobs in government and industry, and this accounts for some of the observed narrowing in earnings differences. These trends appear to have run their course, however. Industrial patterns of employment were important for explaining racial differences in earnings as long as blacks were disproportionately employed in low-wage industries. The restructuring of employment during the 1940-1980 period, most of which occurred before 1970, weakened this relationship considerably and hence the importance of any remaining employment differences in explaining the black-white earnings gap.

TABLE 5.6

Distribution of Black Male Labor Force by Sector and Age

	1940	1950	1960	1970	1980
Agriculture					
25-34	32.5	16.6	8.2	4.0	1.9
35-44	29.3	17.3	9.0	4.4	2.3
45-54	36.0	19.7	12.2	5.9	3.3
55-64	48.2	27.2	15.7	9.8	4.7
Total	37.6	21.0	12.0	5.8	2.8
Private nonagriculture					
24-34	61.8	73.0	78.0	78.9	76.5
35-44	63.7	73.8	76.4	75.9	75.9
45-54	57.1	71.9	75.9	74.0	71.3
55-64	45.4	66.1	74.3	73.9	69.8
Total	56.5	70.9	76.1	75.8	74.7
Government					
25-34	5.7	10.4	13.8	17.1	21.6
35-44	7.0	8.9	14.6	19.7	21.8
45-54	6.9	8.4	11.9	20.1	25.3
55-64	6.5	6.7	10.0	16.4	25.5
Total	5.9	8.1	11.9	18.4	22.5

Source: Census of Population, 1940-1980, Public Use Sample.

TABLE 5.7

Male Workers Ages 35-44 Leaving Agriculture Over the Decade

	Black	White
1940-50	33%	16%
1950-60	29	28
1960-70	34	21
1970-80	25	0

Note: These rates were calculated by subtracting the share of males ages 45-54 in the agricultural labor force in year $t+10$ from the share of males ages 35-44 in the agricultural labor force in year t and dividing the remainder by the share in year t.

TABLE 5.8

Percentage by which Weekly Earnings of Married Men Exceed Weekly Earnings of Unmarried Men

Age group and race	1940	1950	1960	1970	1980
25-34					
Black	6.7	6.4	16.2	12.7	16.8
White	23.0	21.2	21.7	20.3	21.3
35-44					
Black	10.7	8.2	12.6	14.5	15.9
White	32.9	26.5	28.3	24.9	19.4
45-54					
Black	15.0	16.2	13.3	21.4	20.6
White	40.7	31.3	32.1	31.2	22.2
55-64					
Black	16.8	11.5	13.8	20.5	19.3
White	42.3	30.0	30.3	29.5	22.0

Note: Data for 1940 based on an estimate of hourly earnings. Annual earnings are divided by "full-time equivalent" weeks times 40 hours, assumed to be a full-time week.

Source: Census of Population, 1940-1980: Public Use Sample.

Marital Status

Married men earn more than unmarried men. One possible reason for lower relative earnings of black men is that, in comparison with white men, they have a lower marriage rate.[4] The underlying source of the higher earnings of married men is believed to be the traditional division of labor within the family in which the husband has primary responsibility for earning an income while the wife attends to child rearing and other household chores. Married men are known to work longer hours and may increase the intensity of work in other ways as well.[5] (The causality may also run the other way if single men are simply low earners whom women will not marry.)

The earnings advantage associated with marriage is shown, by race, age, and year, in table 5.8. Historically, the differential has been greater among whites than blacks, but the difference between them has narrowed considerably over time. For example, among 25–34 year olds in 1940, married white men earned 23 percent more than unmarried men whereas the premium was only 7 percent for black men. By 1980 the black rate had jumped to 17 percent, in comparison to a relatively stable rate of 21 percent for whites.

Table 5.9 displays the corresponding proportions of married men with spouse present. It is evident that white men are generally more likely to be married than are black men and that this difference, small or negative in 1940, has increased steadily over time. Another striking fact is that the proportion of married men, both white and black, has been falling since 1960, especially after 1970, and for 25–34 year olds.[6]

[4] The term "married," as used here, refers only to a married individual whose wife is present. All other persons are "unmarried." In 1940 the "married" group includes some married men whose spouses are absent for reasons other than separation. The frequency of such "other" absences among men is likely to be low.

[5] See Bernard (1972) for a more thorough discussion of the relationship between male earnings and marriage.

[6] Census enumeration undercounts blacks relative to whites and

TABLE 5.9

Proportion of Men Married with Wife Present by Age and Race

Age group and race	1940	1950	1960	1970	1980
25-34					
Black	.740	.724	.740	.737	.563
White	.717	.803	.828	.822	.692
35-44					
Black	.819	.794	.789	.764	.704
White	.844	.870	.895	.887	.837
45-54					
Black	.799	.767	.789	.767	.719
White	.843	.852	.886	.892	.864
55-64					
Black	.765	.721	.757	.756	.742
White	.803	.809	.856	.874	.881

Source: Census of Population, 1940-1980, Public Use Sample

TABLE 5.10

Black-White Ratios of Weekly Earnings by Marital Status and Age

Marital status and age	1940	1950	1960	1970	1980
Married					
25-34	47.2	65.3	64.1	71.7	80.2
35-44	42.2	59.9	59.5	63.8	71.9
45-54	39.6	56.1	56.1	61.4	69.8
55-64	39.6	54.9	54.9	60.6	67.0
Unmarried					
25-34	54.4	74.4	67.2	76.5	83.2
35-44	50.6	70.1	67.8	69.5	74.0
45-54	48.5	63.4	65.4	66.4	70.7
55-64	48.3	64.0	62.9	65.1	68.5

Source: Census of Population, 1940-1980: Public Use Sample

These data suggest the possibility that the lower propensity of blacks to be married may have dampened their earnings. If so, relative black-white earnings should be higher within marital groups than overall.[7] Table 5.10 presents black-white ratios of weekly earnings by marital status, region, age, and year, which generally are higher than ratios not stratified by marital status (table 1.3 in chapter 1). The apparent effect is quite modest, however, suggesting that marital status, while an important correlate of earnings, does not play a large role in explaining racial differences in earnings.

is more likely to miss single men. As a result, the figures reported in table 5.9 probably overestimate the true proportions of married men and understate the black-white difference.

[7] In the limit the ratios would be one if marital status were the only reason for earnings differences.

Chapter 6

A Multivariate Analysis

Previous chapters suggest that racial differences in earnings partly result from racial differences in education, region of residence, work experience, industry of employment, and marital status. Those chapters, however, considered the relation between earnings and each factor separately from the others. The primary task of this chapter is to measure the joint effect of all these factors on the black-white earnings gap and how they have influenced the gap over time.

Two key questions are addressed:

- What percentage of the black-white earnings gap in each year (1940–1980) can be attributed to racial differences in worker characteristics?
- What portion of the change in the gap from decade to decade is due to changes associated with these factors?

The specific statistical technique used to address these questions is multiple regression, which simultaneously evaluates the effects of several factors on earnings. In so doing, it permits us to assess how racial differences in these factors individually and collectively affect the earnings gap and the trend in the gap over time. The factors used in the analysis have all been discussed at length in previous chapters. They are known to be important determinants of earnings and, important to a historical analysis, are defined consistently in all of the censuses of the population between 1940 and 1980. Defined precisely, these factors are:

- **Years of schooling completed** (separate effects are measured for years 0–12 and 13 and over)[1]
- **Potential years of work experience** (the number of years since leaving school: person's age – years of schooling – 6)
- **Region of residence** (whether worker lives in the Northeast, North Central, West, or South.)
- **Industrial sector of employment** (whether worker is employed in private nonagricultural industries, civilian government, agriculture, or the armed forces)
- **Marital status** (whether a person is married, spouse present.)[2]

Using the regression technique, each characteristic is linked to weekly earnings by a coefficient which measures the change in earnings that, on average, results from a change in the level of the characteristic.[3] That is, coefficients provide a measure of the gain in weekly earnings associated with an increase in the characteristic. Separate estimates of each characteristic's coefficient are made for each census year, for black and white men, and for 10-year age groups. Since coefficients are tied to earnings, differences in estimated coefficients between black and white men can help to account for differences in their average earnings. Coefficient differences, however, can arise for several reasons, including omission or mismeasurement of important determinants of earnings, labor market conditions, and labor market discrimination. Although infer-

[1] A two-segment linear spline function is used to capture the differential effects on earnings of an additional year of schooling for 0–12 years of school and for 13 and over years of school.

[2] Notable determinants of earnings omitted include direct measures of skills derived from formal schooling and on-the-job training, and other characteristics that relate directly to job performance or ability to learn new skills, such as family background.

[3] For example, the coefficient associated with schooling measures the percentage gain in earnings for each additional year of school. Suppose each year is estimated to yield a return of 8 percent. Then 12 years of education would provide an increase in earnings equal to 8 percent compounded over 12 years, or roughly 1½ times what earnings would be without any education. A similar example would apply to experience.

Region, industry, and marital status, however, are somewhat different. The term "level" refers to a category of the characteristic in which an individual may be observed. For example, region has four categories or "levels" corresponding to four regions. A change in levels, then, means a switch from one category, e.g., region, to another and the (percentage) difference in earnings is associated with being in one category versus another.

Some determinants of earnings could not be explicitly included in the analysis. The effects of some of these may be reflected in estimates of the coefficients of included characteristics. School quality, for example, will influence the coefficient on years of school.

ences can sometimes be made as to why coefficients differ, such explanations are speculative and must be treated as such.

Thus, two groups of workers may earn different incomes if they possess different characteristics or if the coefficients differ. Formally, the difference in their earnings is the sum effect of the two sources: differences in average characteristics and differences in coefficients. This basic dichotomy is used in performing the analysis.[4]

A major reason for doing this analysis is to provide insight into the extent to which the racial gap in earnings can be attributed to current labor market discrimination. The five explanatory variables defined above are believed to be reasonably free of such labor market discrimination although schooling clearly has been affected by the past discrimination of State and local governments in the allocation of school resources. Variables such as occupation have been excluded from the analysis because it is ambiguous whether they reflect skill or reflect discrimination in job entry or promotion. To the extent *current* labor market discrimination is reflected in the analysis, it must be a factor contributing to racial differences in coefficients. Since coefficients can vary for reasons other than discrimination, the collective effect of differences in estimated coefficients can only be used to establish an approximate upper bound on the effect of labor market discrimination on the earnings gap.[5]

The analysis is discussed in the following sequence. The first section looks at the sources of the earnings gap in each census year from 1940 to 1980. The portion of the gap due to racial differences in worker characteristics is estimated for various age groups and each census year. This procedure is applied to all characteristics collectively and then individually. In the second section, a similar procedure is used to assess how much of the decade to decade change in the earnings gap reflects changes in the characteristics of black and white workers.

Accounting for the Earnings Gap

Differences in worker characteristics may account for part of the earnings gap. The extent of the effect can be estimated by calculating the change that would occur in the earnings gap if the average black worker were to possess the same characteristics as the average white worker. In this way the part of the earnings gap attributable to racial differences in characteristics would be eliminated. Any gap remaining after characteristics are equalized must be due to differences in coefficients.

Table 6.1 shows three ways of measuring the results of applying this procedure: (1) as an adjusted ratio of earnings (column 2); (2) as a percentage increase in black earnings when white characteristics are assigned (column 3); and (3) as the percentage of the earnings gap eliminated (column 4). The discussion focuses on young men 25–34, but the observations noted usually apply to the other age groups as well.

Between 1940 and 1980, the unadjusted earnings ratio for young men (column 1) increased from 48.7 to 78.8 percent. However, after adjusting for racial differences in schooling, regional and industrial distributions, etc., the earnings ratio is 70 percent in 1940 and increases to 87.4 percent by 1980. Thus racial differences in the five characteristics included in the analysis are an important reason for the low relative earnings of blacks. For example, the earnings of black workers aged 25–34 would have increased by nearly 44 percent in 1940 had their characteristics been the same as those of whites (see column 3). By 1980 the adjustment for racial differences in characteristics raises earnings for this group by only 11 percent. The main reason for this smaller effect is that racial differences in most characteristics have narrowed. Consequently, there are simply fewer gains to be squeezed from remaining differences.

The share of the earnings gap (column 4) due to the effect of racial differences in characteristics has been substantial and roughly constant over time, generally around 40 percent for men 25–34. (The same is true for the older cohorts, but the share is somewhat smaller, roughly one-third.) The remaining earnings differential can be attributed to racial differences in coefficients which, as noted, reflect unmeasured factors that were necessarily omitted from the analysis.[6]

[4] The specific technique used to answer these questions is called regression decomposition (Blinder, 1973; Oaxaca, 1973) and is described in further detail in app. C.

[5] Rosen's work (1978) demonstrates, however, that the payoff rate for particular skills may not be equal for workers who apply them to different kinds of jobs, e.g., physical strength may not have the same payoff in sedentary jobs as it does in jobs requiring significant physical effort. Also see the discussion in chap. 3 of empirical issues in measuring discrimination.

Individual characteristics can be examined in much the same way as the collective effect of all differences in characteristics. In each case the earnings of an average black male are recalculated assuming that he possesses the average white male's level of the particular characteristic. For example, for schooling we calculate what the average black worker would earn if he had completed the same years of schooling as the average white worker without changing any other characteristic. This procedure is repeated for each characteristic. The influence of each characteristic on the black-white earnings gap is presented in table 6.2 for two age groups.[7]

The most important racial differences appear in schooling and regional patterns of residence. Schooling differences among young men alone account for over a quarter of the earnings gap in 1970 and 1980, and a smaller share in earlier years. Despite the somewhat smaller proportional effect on the earnings gap before 1970, schooling differences, nevertheless, account for significant absolute differences in earnings.

Among mature men, ages 45–54, schooling differences tend to explain less of the earnings differential. However, this does not indicate smaller black-white schooling differences in comparison to young men but rather that schooling appears to contribute less to the earnings of older men.[8]

The heavy concentration of blacks in the South is also confirmed to be an important reason for the earnings gap, but the regional effect has abated over the decades. In 1940, at a time when a disproportionate share of blacks lived in the low-wage South, 19 percent of the earnings gap among men 25–34 would have been eliminated by redistributing the black population to match the location of whites.[9] During the next 40 years, however, a large number of blacks migrated out of the South, causing black and white population distributions to become more alike. Moreover, wages in the South began to catch up to northern levels during this period due to outmigration of workers and strong economic growth in the South, among other reasons. Both population and wage trends diminished the role of remaining regional differences in explaining the gap: by 1980 regional differences accounted for less than 11 percent of the gap among young workers.

Racial differences in industrial employment patterns were relatively significant in 1940, when many blacks were still agricultural workers, but explained only a modest 8 percent of the gap among young men. In terms of the broad sectors defined in this study, massive flight of black labor out of agriculture during the 1940s sharply reduced racial differences in industrial patterns and, hence, reduced the effect on the black-white earnings differential.

Lower marriage rates among blacks appear to explain little of the earnings gap. It is worth noting, however, that their effect increased fairly sharply between 1970 and 1980, from 2.7 to 7.5 percent of the gap among young men. This upward trend appears to be due largely to a relative increase in the "marriage premium" among black men compounded by a decline in their propensity to marry. As indicated in chapter 5, causality between earnings and marriage can run both ways, so the increasing size of the marital premium potentially can stem from several different sources.

On the whole, racial differences in the few measurable characteristics available in census data explain a substantial share of the earnings differential—roughly 30–40 percent. This leaves an "unexplained" earnings differential that corresponds to an earnings gap of 12.6 percentage points (for 25–34 year-olds) in 1980.[10]

[6] An alternative approach is to ask how white earnings would change if white men possessed the same characteristics as the average black man. The first way is reported here because it seems more natural to inquire how much blacks would benefit if they had the typically greater endowments of schooling and other factors of whites. When the second approach is followed (see table C.2, app. C), differences in characteristics generally "explain" more of the earnings gap—40–50 percent—than the first approach. Thus, the estimated effects of differences in characteristics reported in table 6.1 are likely to be on the low side. The disparity between the two approaches stems from racial differences in estimated regression coefficients.

[7] Table 6.2 corresponds to column 4 of table 6.1.

[8] Among older cohorts in earlier decades, mismeasurement of schooling completed may account for the apparent low value of schooling and, hence, small effect of schooling differences. Low school quality for older blacks is another possible explanation.

[9] This experiment is somewhat arbitrary because if the population were actually redistributed, corresponding changes would occur in the structure of payoffs among regions if not other characteristics. As discussed in chap. 5, moreover, the North-South earnings differential may reflect unmeasured regional differences in skill levels of workers.

[10] Studies using more detailed data with superior measures of worker characteristics have been able to attribute 50–70 percent of the gap to differences in characteristics. See, for example, Corcoran and Duncan (1979), who use the Panel Study of Income Dynamics to investigate black-white differences in earnings and explain about 50 percent of the gap. Analysis using the National Longitudinal Survey: Young Men's Panel (for men aged 25–34 in 1976), explains 70 percent of the gap (O'Neill, 1983).

TABLE 6.1

Effects of Differences in Characteristics on the Wage Gap

	Black-white earnings ratio:		Increase in earnings ratio adjusting for characteristics[b]	Percent of gap due to differences in characteristics[c]
	Unadjusted	Adjusted[a]		
1940				
Ages:				
25-34	48.7	70.0	43.7	41.5
35-44	44.9	60.6	35.0	28.5
45-54	42.7	58.4	36.8	27.4
55-64	42.6	57.7	35.4	26.3
1950				
Ages:				
25-34	64.9	79.2	22.0	40.7
35-44	59.3	74.5	25.6	37.3
45-54	56.3	67.7	20.2	26.1
55-64	54.2	69.0	27.3	32.3
1960				
Ages:				
25-34	62.3	75.1	20.5	34.0
35-44	58.4	72.7	24.5	34.4
45-54	55.7	71.1	27.6	34.8
55-64	53.2	68.3	28.4	32.3
1970				
Ages:				
25-34	70.3	81.5	15.9	37.7
35-44	62.8	74.9	19.3	32.5
45-54	59.5	73.9	24.2	35.6
55-64	58.9	74.4	26.3	37.7
1980				
Ages:				
25-34	78.8	87.4	10.9	40.6
35-44	70.5	80.9	14.8	35.3
45-54	67.5	77.9	15.4	32.0
55-64	65.0	75.7	16.5	30.6

[a] Assumes that black males have the average characteristics of white workers. These characteristics consist of: years of schooling completed, years of potential work since school, region of residence, industry of employment, and marital status.

[b] This is the percentage increase in the earnings ratio when white characteristics are assigned.

[c] [Column #2 - Column #1]/[100 - Column #1] X 100.

TABLE 6.2

Effect of Differences in Individual Characteristics on the Black-White Differential by Selected Age Groups

	Percentage of earnings differential explained				
	1940	1950	1960	1970	1980
Ages 25-34					
Schooling	17.2	17.7	17.8	26.9	27.4
Region	18.9	19.4	14.1	11.8	10.8
Industry	7.8	4.0	3.7	2.0	2.4
Marital status	−0.2	1.7	2.4	2.7	7.5
Ages 45-54					
Schooling	3.5	3.2	7.2	14.1	15.7
Region	13.3	14.6	15.6	11.1	8.3
Industry	7.0	3.0	5.9	2.5	0.9
Marital status	0.3	1.8	1.8	4.0	6.2

Note: Figures express the percentage contribution of each characteristic to the earnings gap that would be expected if black men had the white mean level of the indicated characteristic.

Racial Differences in Coefficients

Sixty to seventy percent of the earnings differential cannot be explained by black-white differences in census-measured characteristics. Formally, this residual is attributed to racial differences in the coefficients that link earnings to the characteristics. This section examines estimates of coefficients for black and white men ages 25–34 (see table 6.3; appendix C presents coefficients for other age groups). The coefficients associated with schooling and potential experience measure the percentage gain in earnings, or return, associated with a year of school and experience, respectively. Region, industry, and marital status are categorical variables, meaning they classify individuals into categories and have coefficients that are interpreted somewhat differently from the continuous schooling and experience variables. Region, for example, classifies people according to whether they live in the Northeast, North Central, South, or West. The coefficient associated with living in a particular region is the percentage difference (i.e., change) in earnings between that region and another selected to be a reference group. Industry and marital status coefficients, similarly, measure differences between each category (e.g., agriculture, government) and the reference group (e.g., private nonagriculture).

Schooling

Because the monetary return from completing a year of school is believed to vary with grade, two separate coefficients are estimated: one for 0–12 years of school completed and one for years beyond 12. Generally blacks receive a lower return on schooling than whites, particularly in the 0–12 years range (table 6.3, panel A). These differences lessened significantly, however, over the 1940–80 period. For example, estimates indicate that among individuals ages 25–34 in 1960, whites' earnings increased 3.9 percent more *per year* of school than those of their black counterparts (i.e., 8.0 minus 4.1) for the first 12 years of school. By 1980 differences in coefficients had narrowed for this age group to 2.3 percent in the first 12 years while years of college apparently rewarded blacks slightly better than whites.

These coefficient differences are large and suggest the potential importance of the monetary return on schooling in explaining why blacks earn less than whites. Similarly, it is apparent that the earnings gap has narrowed over time, in part, because racial differences in schooling coefficients have narrowed.

TABLE 6.3

Estimated Effects of Worker Characteristics on Weekly Earnings of Men Ages 25-34 by Race (in percentages)

	1940	1950	1960	1970	1980
Panel A: Years of schooling[1]					
0-12 years					
Black	4.2	2.9	4.1	5.6	7.0
White	8.3	5.9	8.0	7.6	9.3
13+ years					
Black	7.7	3.8	5.2	7.3	7.1
White	9.9	4.8	6.9	7.8	6.9
Panel B: Years of potential work experience[2]					
Black	1.7	0.8	1.5	1.7	2.5
White	3.2	2.3	3.0	2.9	3.5
Panel C: Region (reference = Northeast)[3]					
North Central					
Black	− 2.3	5.7	6.5	5.0	15.4
White	− 6.3	2.0	2.6	− 0.3	6.0
West					
Black	− 0.6	9.5	1.0	− 3.9	5.3
White	− 1.7	7.8	6.1	− 0.8	5.1
South					
Black	−32.2	−25.2	−26.9	−22.1	− 5.1
White	−17.4	− 6.9	−10.0	−10.4	− 1.6

TABLE 6.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings of Men Ages 25-34 by Race (in percentages)

Panel D: Industrial sector (reference = private nonagriculture)[4]					
Agriculture					
Black	−49.6	−48.6	−47.1	−41.4	−34.8
White	−52.4	−49.4	−45.1	−32.3	−26.8
Government					
Black	− 8.2	6.8	6.6	1.4	− 3.3
White	− 7.8	− 7.0	−13.5	−10.2	−13.6
Panel E: Marital status (reference = nonmarried)[5]					
Black	9.3	12.7	18.3	15.0	16.9
White	19.6	19.5	22.9	20.4	20.0

Note: Each estimated coefficient, or "return," is derived from a multiple regression of weekly earnings on the five variables in the table. Separate estimates are made by age group, race, and census year. They are interpreted as percentage changes in earnings due to a change in the characteristic.

[1]The return on schooling is estimated separately for years 0-12 and for years 13 and over. It measures the percentage increase in earnings associated with a year of schooling.
[2]This is the return from one year of potential work experience.
[3]Each estimate indicates the (percentage) earnings difference associated with living in the particular region in contrast to living in the Northeast region.
[4]Each estimate indicates the (percentage) earnings difference associated with working in the particular sector in contrast to working in a private nonagricultural industry. A residual category of "other industries" was also included but is not reported to save space.
[5]Each estimate indicates how much more a married man earns than an unmarried man (in percentage terms).

In fact, the combined effect of convergence in returns and levels of schooling ranks education as one of the most important factors underlying the narrowing of the earnings gap between 1940 and 1980.[11]

Education may translate into lower earnings for blacks than whites because the education received by blacks may be of lower quality than the education received by the average white. Racial differences in parental education, income, and other family background factors may also affect how much children gain from school.[12] Improvements in these areas over time, therefore, may account for the convergence in returns on schooling.

Discriminatory practices may also be responsible for the lower monetary gains from schooling for blacks. For this to be true, however, such practices must have a greater effect on the work opportunities of educated blacks relative to less educated blacks. If so, the convergence in returns over time could reflect legal and judicial action to block discriminatory practices or may indicate changing attitudes.

Potential Work Experience

Estimates of the return on potential work experience for 25–34 year-old men (table 6.3, panel B) indicate that earnings of blacks grow with age at a slower rate than those of whites and that the difference in returns has tended to narrow over time. These results suggest that blacks have tended to accumulate skill at a slower rate than their white counterparts, perhaps because of discrimination in training and advancement or for other reasons. The convergence in returns may mean that blacks are

[11] Increases in the monetary returns on schooling do not automatically lead to higher absolute levels of earnings. Higher returns indicate that the more highly educated are earning more relative to the less educated. But this can occur even though everyone experiences lower earnings as long as the less educated workers lose more. It turns out, however, that black-white earnings ratios have been rising for most low-education cohorts, defined by industry, region, and marital status, thus supporting the assertion that earnings of blacks across all education levels have been rising relative to the earnings of whites.

[12] Chiswick (1986) suggests that differences in the number of children in the family and in the labor force participation of mothers may help to account for differences in the return on schooling among ethnic and racial groups. Black women have more children and, historically, have worked more in the market. Both factors are found to reduce the time spent with a child and, therefore, affect further educational gains.

increasingly entering career paths that are more similar to those of whites and that offer, or demand, more intensive training.[13]

Region

Estimated earnings differences between regions (panel C, table 6.3) confirm that earnings are lower in the South than any other region.[14] In 1940, for example, black males in the South earned 32.2 percent less than blacks in the Northeast. The comparable figure for white males was 17.4 percent. This difference was basically maintained until the 1970s when earnings of both black and white males in the South rose relative to other regions.

These estimates do not show precisely how much more people from the South and their descendants earned as a result of relocation. It is clear from the sheer magnitude of the North-South differences, however, that the realized gains were fairly substantial through 1970. During the 1970s, southern wage levels rose dramatically in comparison to other regions. Even if these gains were equal for southern blacks and whites, the predominance of blacks in the South would mean that average black earnings grew relative to average white earnings. In fact, the wages of southern blacks appear to have grown faster than those of southern whites, thus compounding the positive effect of general southern growth on relative earnings.

Industry

Estimates of earnings differences among industrial sectors (table 6.3, panel D), confirm that earnings in agriculture are generally lower than in private nonagricultural industries and government. For example, blacks who were employed in agriculture in 1980 earned 34.8 percent less than blacks in private nonagricultural jobs, and whites earned 26.8 percent less. These results strongly support the view that the shift of blacks from agriculture into private nonagricultural and government jobs had a positive effect on average black earnings. Recall, however, that most of this movement had run its course by 1960 and subsequently had very little influence on relative earnings.

Marital Status

The differences in earnings between married and unmarried men (table 6.3, panel E) are similar to the cruder estimates of the marriage premium presented in chapter 5. They support the contention that lower marriage rates among blacks may be a reason for the low relative earnings of black males.

Changes in the Earnings Ratio Over Time

In analyzing why black and white men have different earnings, several factors were identified as contributing to the narrowing of this differential over time. On the whole, blacks and whites have become more alike in terms of certain key characteristics. Thus, differences in geographic and industrial distributions of workers and years of schooling all narrowed during the 1940–80 period. There have also been important changes in the coefficients linking earnings to certain characteristics, notably the narrowing differences in schooling and work experience coefficients and the general narrowing of North-South differences in earnings. Although changes in coefficients have been somewhat erratic and are not very well understood, they are, nonetheless, a major source of the narrowing in the black-white earnings differential.

The purpose of this section is to evaluate the collective effect on the black-white earnings ratio of trends in characteristics over the 1940–1980 period. What cannot be explained by changes in racial differences in characteristics implicitly reflects changes in coefficients. The procedure estimates what change would have occurred in the ratio if *only* characteristics had changed between census years, with coefficients remaining the same. Table 6.4 reports, by age group and year, unadjusted earnings ratios and adjusted ratios calculated with 1980 (race-specific) coefficients.[15]

The results indicate that increasing similarity in the characteristics of black and white men accounts

[13] If the estimates of the returns on years of work were derived by actually tracking workers over their careers, this interpretation could be more certain. Unfortunately, they are derived by comparing individuals of differing ages, which raises the alternative possibility, discussed in chap. 5, that the estimates reflect "cohort" effects, not purely "life cycle" effects. Improvements in black earnings that are due, for example, to diminution of the effects of labor market discrimination may accrue disproportionately to labor force entrants. If so, the true growth rate of earnings for blacks is underestimated, because the earnings of older workers will remain under a greater influence from past or present discrimination.

[14] The estimates in table 6.3 are net of the possible influences of regional differences in education and industry, whereas table 5.3 above provided only partial control for educational differences.

[15] The choice of a reference year, i.e., 1980, is arbitrary but does not significantly alter the conclusions.

TABLE 6.4

Unadjusted Ratios of Black-White Earnings Compared to Ratios Adjusted to Reflect 1980 Coefficients

	1940	1950	1960	1970	1980
Ages 25-34					
Unadjusted ratio	48.7	64.9	62.3	70.3	78.8
Adjusted ratio	67.4	71.9	74.0	77.5	78.8
Ages 35-44					
Unadjusted ratio	44.9	59.3	58.4	62.8	70.5
Adjusted ratio	65.0	65.2	66.4	68.4	70.5
Ages 45-54					
Unadjusted ratio	42.7	56.3	55.7	59.5	67.5
Adjusted ratio	68.2	69.4	67.5	67.1	67.5
Ages 55-64					
Unadjusted ratio	42.6	54.2	53.2	58.9	65.0
Adjusted ratio	70.2	69.0	68.4	66.3	65.0

Note: The adjusted ratios are derived by using 1980 coefficients to evaluate the characteristics – schooling, experience, region, industry, and marital status – in each year between 1940 and 1980.

for a larger share of the rise in the relative earnings of black men among younger groups than among older groups. Between 1940 and 1980, earnings of young blacks grew 62 percent faster than the earnings of whites; of this relative gain, close to 40 percent can be attributed to convergence in characteristics. Among men ages 35–44, the relative earnings gain for blacks was 57 percent, of which 21 percent can be attributed to convergence in characteristics; and among 45–54 year-old men, characteristics apparently played no role in the increase.

Based on the discussion in earlier chapters, at least part of the gains made by blacks since 1940 is due to improvements in their skill levels (and regions of residence) relative to whites. The five characteristics included in this analysis, however, do not measure all of the determinants of skill. Moreover, in the case of schooling, grades completed are poorly measured for the early cohorts. In addition, some gains, such as improvements in school quality and in the knowledge imparted by parents at home, as well as more detailed regional changes, are reflected in changes in the estimated coefficients. Consequently, the general upward trend in the adjusted ratios probably understates the full gains made by blacks through accumulation of skill. These unmeasured gains in skill are part of the balance of the change in the unadjusted ratios, i.e., change in the unadjusted minus change in the adjusted ratios.

Summary

The analysis in this chapter is based on the premise that earnings are determined by certain characteristics of the individual in combination with the coefficients that link these characteristics to earnings. Therefore, earnings differences between blacks and whites can be viewed as composed of two parts, differences in characteristics and differences in coefficients.

The influence of current labor market discrimination in this analysis would be confined to an effect on racial differences in coefficients, since the explanatory variables used in the analysis are believed to be largely free from the influence of current labor

market discrimination. (Schooling, however, reflects the effects of past discrimination in resource allocation.) Therefore, netting out the effects of racial differences in these characteristics isolates a portion of the earnings gap that contains virtually all of the effects of current labor market discrimination. Unfortunately, such effects are not fully isolated because this portion of the gap also reflects racial differences in several important but unobserved determinants of earnings such as school quality, skills imparted by parents, and a host of other factors that shape individual productivity and earnings. Nevertheless, rough upper limits are established within which the effects of current labor market discrimination are believed to fall.

The analysis of earnings differences over the 1940–1980 period indicates that racial differences in the five characteristics included in the analysis can account for 30 to 40 percent of the wage gap, depending on the age group and the year examined. The remaining, or unexplained, gap also varies by age group, but for all age groups the gap narrowed dramatically over time. After adjusting for differences in the five characteristics, black workers aged 25–34 would earn 30 percent less than whites in 1940 and 12.6 percent less in 1980. At ages 45–54, this unexplained residual would have been 41.6 percent in 1940 and 22.1 percent in 1980. These unexplained residuals reflect the upper boundary of the effect of labor market discrimination on the earnings of black men.

Examining the effects of each characteristic reveals that differences in years of school play the largest role, accounting for up to 27 percent of the gap among young men in 1970 and 1980. Moreover, this share has generally increased over time as the influence of other characteristics has abated. The effect of lower schooling levels has been compounded by the fact that blacks apparently receive a lower return on an additional year of school than whites. Over time, however, there has been a substantial convergence in returns on schooling.

The concentration of the black population in the South also explains a significant part of the earnings gap, though its importance has diminished over time largely because of migration and southern economic development. Finally, the combined effect of differences in industrial employment patterns and marital status accounts for less than 10 percent of the earnings gap in any year and age group.

The second part of this chapter evaluates the collective effect on relative earnings of changes in worker characteristics and changes in the coefficients associated with these characteristics. Although gains by blacks in the measured characteristics, such as schooling, generally have had a significant effect on raising their earnings relative to whites, the convergence in coefficients or returns seems to have been more important. Changes in coefficients, however, do not provide really concrete explanations, since they can reflect any number of unmeasured factors, including gains in the quality of schooling, improvements in parental contributions to skill development, migration to higher paying areas within the broad regions, and the effects of antidiscrimination laws and policies.

These factors cannot be easily quantified, but their possible contributions can be evaluated qualitatively. The next part of the report investigates the role of antidiscrimination policies and of other factors in this more elusive category of forces affecting the racial gap in earnings.

PART III

Why the Wage Gap Narrowed: Alternative Hypotheses

It has been well documented that the earnings of black men rose substantially more than the earnings of white men over the 1940–1980 period. Only part of the rise in the relative earnings of blacks, however, could be tied statistically to a narrowing in racial differences in schooling, geographic region, age, industrial sector, and marital status. At younger ages about 40 percent of the rise could be explained by these factors, but at older ages very little of the rise could be explained this way.

What factors, then, do account for the bulk of convergence in black-white wage differences? One possibility is that differences in skills or in other factors affecting earnings narrowed in ways that were not measured by the five characteristics included in the statistical analysis. Another possibility is that labor market discrimination against blacks declined, either as a result of general forces in society that affected racial attitudes or as a direct result of Federal civil rights legislation and regulation.

This section explores these unresolved issues as well as the related question concerning the current wage gap and the role of discrimination in accounting for it. Chapter 7 focuses on the role of civil rights programs and policies; chapter 8 assesses the effects of all of the broad factors.

Chapter 7

Labor Market Effects of Civil Rights Policy

Between 1940 and 1980, government increasingly developed and implemented policies aimed specifically at improving the labor market status of minorities and women. This chapter investigates the link between these policies and the substantial improvement in the relative earnings of black men during the same period. The chapter provides a brief description of the more important civil rights programs, analyzes the possible effects of these programs from the standpoint of economic theory, and reviews several prominent studies of their effects.

Background

Some of the earliest efforts to penalize labor market discrimination were made by State governments. Between 1945 and 1959, 13 States (all outside the South) enacted legislation prohibiting employment discrimination and established commissions with powers to enforce these laws. Before 1960, however, the resources allocated to most of these commissions were generally meager. During the 1960s and 1970s, the enforcement effort greatly expanded, and the number of States with antidiscrimination laws and effective monitoring mechanisms substantially increased.

The first significant action by the Federal Government to attack labor market discrimination was passage of the Civil Rights Act of 1964. Title VII of this law prohibits discrimination in all aspects of employment and compensation based on race, color, religion, sex, or national origin. The Equal Employment Opportunity Commission (EEOC) was established to investigate complaints of such discrimination. The provisions of Title VII, as amended, cover the employment activities of private employers with 15 or more employees, as well as the activities of labor unions, employment agencies, State and local governments, and educational institutions.

The next significant action by the Federal Government aimed at eliminating the effects of discrimination was the issuance of Executive Order 11246 in 1965.[1] This order, as amended, goes beyond the nondiscrimination provision of Title VII and requires that Federal contractors, subcontractors, and federally assisted construction contractors take "affirmative action" to ensure that employees and applicants are treated without regard to their race, sex, creed, color, or national origin. In 1980 Federal contractors employed roughly 30 percent of the nongovernmental, noneducational work force and were awarded $110 billion in Federal contracts.[2]

[1] Executive Order 11246 is the most recent in a series of Executive orders dating back to 1941. Norgren and Hill (1964) describe these earlier orders and examine their effect on reducing discrimination. They conclude that "the twenty years [1941–1961] of intermittent activity by presidential committees [established by the Executive orders] has had little effect on traditional patterns of Negro employment" (p. 165).

[2] The percentage of workers in Federal contractor firms was obtained from unpublished tabulations provided by the EEOC

Responsibility for administering Executive Order 11246 is delegated to the Office of Federal Contract Compliance Programs (OFCCP) in the Department of Labor. Regulations implementing the order require all contractors with $50,000 or more in Federal contracts and 50 or more employees to maintain written affirmative action plans. These plans are "results oriented" and require the contractor to detail occupations in which the contractor is deficient in the utilization of minority groups and women, and to develop targets ("goals and timetables") to correct such deficiencies. Failure of contractors to comply with the order can ultimately result in contract cancellation and debarment from future contracts. In practice, noncompliance typically results in conciliation agreements and written commitments to correct deficiencies.

Issues in Enforcement

Empirical difficulties in detecting discriminatory behavior pose potentially serious problems for the enforcement of civil rights programs. In the past, discrimination was legal and overt. Employers could maintain dual pay scales by race or could blatantly post "help-wanted" advertisements barring blacks or other minorities from applying. Nowadays, discrimination in employment is illegal and therefore likely to operate in more subtle ways. Such subtle forms of discrimination may not be readily detected by outside observers and may never come to light unless employees or rejected applicants bring suit.

Even if a particular business practice is detected as having possible discriminatory effects, honest differences of opinion may easily arise as to whether it reflects discrimination. Productivity differences between workers often cannot be measured very well, possibly resulting in incorrect judgments about the extent to which racial disparities in pay, hiring, and promotion result from discrimination. Given the problems of detecting or establishing the presence of discrimination, it is probably unavoidable that some benign business practices will be interpreted as discriminatory in nature, while some discriminatory behavior goes entirely undetected.

Difficulties in detection suggest that remedies for possible discriminatory behavior may create new problems. Discrimination is a multidimensional concept and may affect many different aspects of the employment relation—including recruitment, hiring, firing, pay, and promotion. Even if a particular type of discrimination is correctly identified, its remedy may simply result in the substitution of another type of discrimination. The following example provides an illustration.

Between 1966 and 1978, the EEOC issued increasingly detailed rules (commonly known as the Guidelines) focusing on the use of employee selection procedures that have an "adverse impact" on the employment opportunities of minorities and women. Written tests, educational requirements, and personal interviews are examples of selection procedures that are covered by the Guidelines. As currently implemented, the Guidelines state that an employer's selection procedures generally will be found to have an adverse impact if the acceptance rate for any particular group is less than four-fifths the acceptance rate for the highest group. For example, if an employer hires 5 out of every 10 white applicants but only 3 out of every 10 minority applicants, then the selection procedure generally will be found to have an adverse impact on minority hiring. An employer with a procedure resulting in adverse impact becomes subject to a wide range of potentially costly and time-consuming requirements to prove that it is nondiscriminatory. If unable to do so, the employer may be found to have violated Title VII and penalized accordingly.[3]

Although the clear intent of the Guidelines is to reduce the use of discriminatory practices directed at minorities and women, in practice the Guidelines may have the unintended effect of limiting employment opportunities for minorities and women. For example, to avoid a determination of adverse impact, employers might narrow their applicant pool and recruit only those minorities who have a high probability of meeting the employers' selection criteria.[4] In this way the Guidelines might benefit more highly skilled minorities but actually restrict opportunities for less skilled minorities. The net outcome could be that the acceptance rate of minorities rises, while the actual number of minority hires falls.

In sum, empirical difficulties in detecting and remedying discriminatory behavior pose complex

and Bureau of Labor Statistics. The dollar volume of Federal contracts was obtained from unpublished figures provided by the Office of Federal Procurement Policy.

[3] Lerner (1977, 1980) examines how the judicial system has interpreted adverse impact.

[4] Lerner (1977, 1980) provides a more detailed discussion of how the definition of adverse impact used in the Guidelines may inhibit recruitment of minorities.

problems for the enforcement of civil rights programs. As a consequence, remedies for possible discrimination may have unintended effects that could actually lower the overall economic status of some minorities, while helping others. It is ultimately an empirical question whether policies to reduce discrimination have succeeded.

Econometric Studies

This section reviews the empirical evidence regarding the effects of governmental civil rights programs on the relative labor market status of blacks. Two basic types of studies are reviewed: time series and cross sectional. The times-series studies are best viewed as attempts to measure the combined effect of all civil rights activity occurring after 1964. The cross-sectional studies attempt to measure the individual program effects of the OFCCP and State fair employment practices commissions. Though intended to be more illustrative than exhaustive, the review includes most of the best known studies. The chapter concludes with an overall assessment of the quality of evidence contained in these studies.[5]

From the outset, it should be emphasized that it is difficult to evaluate the labor market effects of governmental civil rights programs. The 1960s and 1970s, decades in which civil rights activity greatly expanded, were a time of rapid socioeconomic change, marked by the expansion of governmental programs designed to reduce poverty, improve educational opportunity, and eliminate the labor market effects of discrimination. Attempting to isolate these various effects places an extreme burden both on the data and on the empirical estimation procedure.

Time-Series Studies

Post-World War II trends in black-white earnings ratios have been the subject of a number of empirical studies. Viewing figure 7.1, relative black earnings appear to have improved noticeably after 1964.[6] Since this period coincides with a greatly expanded level of civil rights activity, the natural temptation is to attach causal significance to the role of government in improving the labor market status of blacks. It is possible, however, that other factors may have caused or contributed to this pattern, and it is precisely the treatment of these other factors that has generated a heated debate concerning the labor market effects of governmental civil rights activity.

Richard Freeman did the first systematic time-series analysis of the effects of civil rights activity on the labor market status of blacks.[7] Factors considered by Freeman to be potentially important determinants of relative earnings were: (1) business cycles; (2) growth in gross national product; (3) relative education of blacks to whites; (4) a "time" effect (measuring changes in attitudes and/or structural shifts in the economy over time); and (5) governmental civil rights activity, represented by cumulative EEOC expenditure per nonwhite worker.

After adjusting for factors 1 through 4, Freeman found that governmental civil rights activity had a significant positive effect on relative black income. Freeman tentatively concluded that the increase in relative income was attributable to the government-induced increase in demand for black labor.

Richard Butler and James Heckman argued that Freeman's results were flawed because of an incomplete specification of the determinants of wages.[8] They reasoned that a relative increase in demand for black labor should increase the relative employment of blacks as well as their relative income. Yet, the relative labor force participation of blacks to whites *declined* after 1964.

To account for the actual pattern of the time-series data, Butler and Heckman emphasized the importance of factors that affect the supply of labor. In particular, they cited the expansion of transfer programs, such as disability and welfare programs, that coincided with the civil rights activities of the 1960s and 1970s. These programs, by reducing incentives to work, tend to reduce labor force participation.[9] They argued that low-wage earners were more likely to participate in such programs than high-wage earners and that, since blacks tend to earn less than whites, the decline in labor force participation should have been relatively greater for blacks. This downward trend in relative black labor force participation has two implications for black

[5] Other reviews of the econometric evidence are Butler-Heckman (1977), and Brown (1984a). This section partly draws on observations made in these other reviews.

[6] "Black" and "nonwhite" are used interchangeably. Brown (1984b) reports that blacks were 85 percent of nonwhite wage and salary workers in 1978.

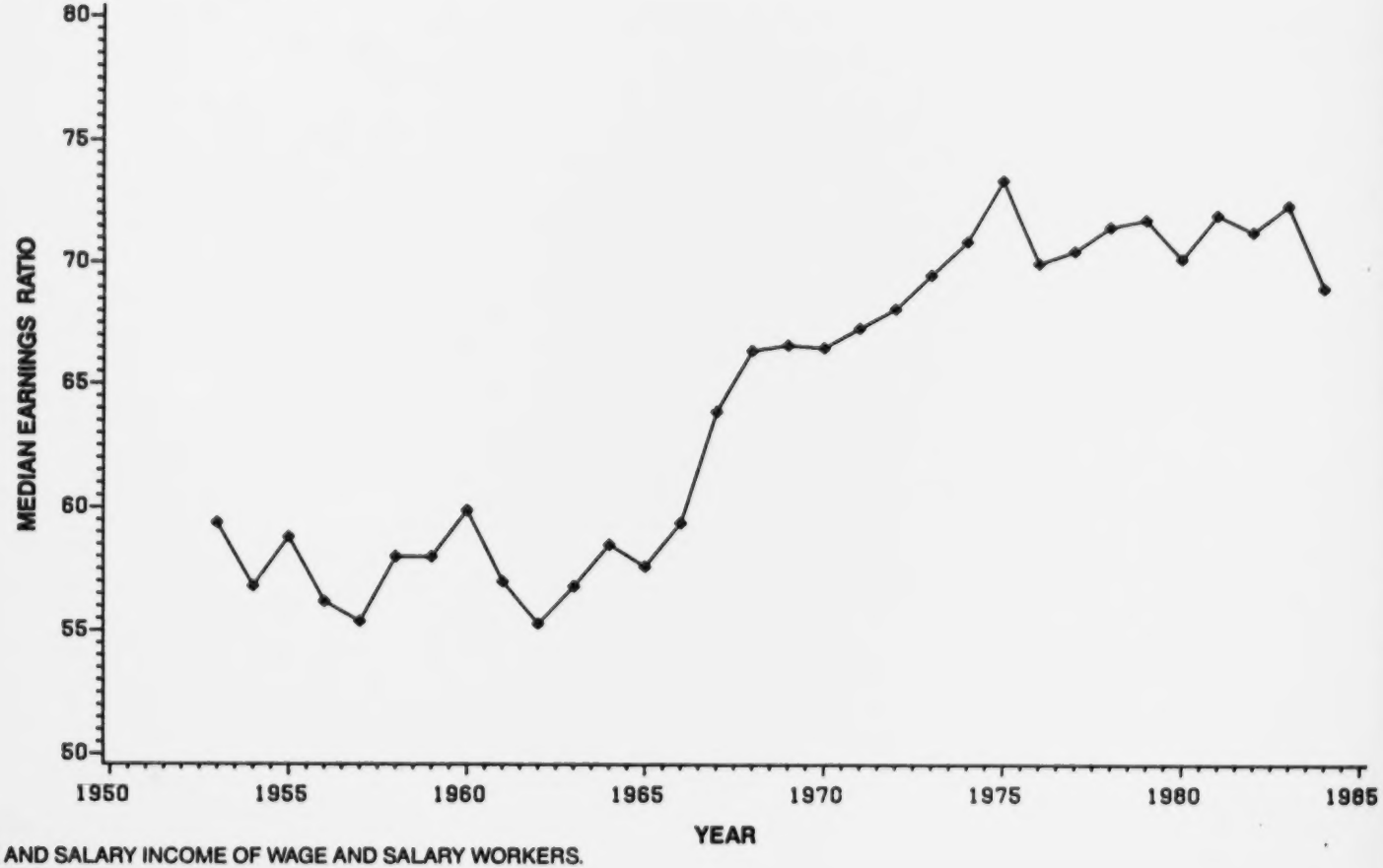
[7] R. Freeman (1973).

[8] R. Butler and J. Heckman (1977).

[9] See the discussion in chap. 2 for a detailed explanation.

FIGURE 7.1

Nonwhite-White Earnings Ratios,* 1953-1984



*WAGE AND SALARY INCOME OF WAGE AND SALARY WORKERS.

Source: Current Population Survey Data.

relative to white earnings. First, a decline in the supply of black workers relative to white workers will tend to increase the relative wages of blacks. Second, since published earnings series include only persons who work, the possible "siphoning off" of low-wage earners by transfer programs may impose an upwards bias on the earnings levels observed in published data. These two implications of the decline in relative black labor force participation suggest that part of the increase in relative black earnings occurring after 1964 may be illusory and cast doubt on Freeman's conclusion regarding the beneficial effect of governmental civil rights activity.

Charles Brown has empirically tested the validity of the Butler-Heckman argument by making several modifications to the basic Freeman model.[10] First he adjusted the published earnings data to account for the possible bias resulting from changes in relative labor force participation described above. His adjustment rested on the assumption that all changes in labor force participation involved persons with low wages. Brown's other modifications consisted of adding: (1) a relative labor supply variable, designed to measure the effect of changing aggregate supplies of labor on relative wages; and (2) a post-1964 time trend, designed to capture the effect of civil rights activity occurring after passage of the Civil Rights Act of 1964. (This replaced Freeman's EEOC variable.)

With these modifications in place, Brown then reestimated the basic Freeman model. His empirical results suggest that the relative decline in black labor force participation has exaggerated the improvement in black earnings, but that the decline in labor force participation cannot explain the entire improvement. Further, changes in relative levels of education, in the relative supply of labor, and business cycle effects do not appear capable of producing the entire increase in relative black earnings occurring after 1964. Brown interprets this unexplained post-1964 improvement in relative earnings as evidence that Federal civil rights policies have had a positive effect on the earnings of black males.[11]

The Freeman and Brown studies of the time-series data suggest that governmental civil rights activities are likely to have had a beneficial effect on increasing relative black earnings, but their results should not be overstated.

First and most important, the tests of the effectiveness of civil rights activity are far from ideal. All time-series studies essentially attribute any unexplained post-1964 change in relative earnings to the influence of Federal civil rights programs. The problem in doing this type of test is that it ignores the possible influence of other factors that are not explicitly included in the analysis. For instance, the post-1964 upward trend in relative black earnings may, in part, be due to the effect of the civil rights movement and to improved public attitudes about race. Table 7.1 reveals a remarkable decline between 1958–1980 in the percentage of white parents objecting to desegregated schools, and the change is especially large in the South. This improvement in stated attitudes undoubtedly was affected by the Civil Rights Act (as the sharp change in attitudes from 1963 to 1965 suggests). On the other hand, passage of the Civil Rights Act may itself have been spurred by the change in attitudes (as the change in attitudes from 1959 to 1963 suggests). Irrespective of the source, the change in attitudes may have broken down barriers for many blacks and also have reduced the degree of prejudice among employers and white coworkers.

Second, chapter 1 documents that relative black earnings increased substantially during the 1940s, more moderately during the 1960s and 1970s, and actually declined slightly during the 1950s.[12] Thus, relative earnings have grown in three out of the four decades for which data are available, and this growth occurred both before (the 1940s) and after (the 1970s) the implementation and expansion of the major civil rights programs. By focusing on the postwar period (i.e., after 1948), however, the time-series studies primarily compare the earnings trends during the 1950s with those after 1964. To the extent that the 1950s may be an exception to the pre-1964 trends in relative earnings, the findings of the time-

[10] C. Brown (1984b).

[11] Brown's results show that about one-half of the post-1964 trend survives the adjustment for selectivity. It is also important to note that his method for correcting for selectivity will tend to overstate the role played by labor market dropouts, since it *assumes* all dropouts previously had low earnings. Brown's results, therefore, suggest that less than one-half of the post-1964 trend in relative earnings can be explained by labor market dropouts. Note, however, Vroman's (1986) analysis, which suggests that labor market dropouts may not be much below the average.

[12] In absolute terms black male earnings grew at a rapid rate during the 1950s—3.4 percent a year in real terms. However, white male income also grew rapidly, in fact, at a higher rate than in any other decade. See chap. 1 for details.

TABLE 7.1

White Parents Objecting to Desegregated Schools (percentage answering "yes")

Year	South	Non-South
1958	72	13
1959	72	7
1963	61	10
1965	37	7
1966	24	6
1969	21	7
1970	16	6
1973	16	6
1975	15	3
1978	7	4
1980	5	5

Source: The Gallup Report, No. 185 (February 1981), p. 30.

series studies may be biased towards finding an "unexplained" post-1964 increase in relative black earnings.[13]

Cross-Sectional Studies

An unfortunate drawback of the time-series studies is that they cannot identify the possible contribution of specific civil rights programs. Time-series studies are, therefore, incapable of disentangling the labor market effects of affirmative action from those of laws that generally prohibit discrimination. From a policy perspective, however, it is important to evaluate the effects of specific programs; if a program is found to be ineffective, society may be better off redirecting resources to other, more effective ones.

The advantage of cross-sectional studies is precisely that they are designed to measure the effects of specific programs. The basic methodology of these studies compares those sectors of the economy that should be more responsive to governmental pressures with sectors of the economy that should be less responsive. A finding that a program has a positive effect on minority labor market status simply means that the program has affected certain sectors of the economy more than others. An unfortunate limitation of this approach is that a program may affect all sectors uniformly. For example, Executive Order 11246 may induce firms with Federal contracts to alter their employment behavior. But if noncontractor firms anticipate holding Federal contracts in the future, they also may alter their current employment practices, and there may be no observed difference between contractor and noncontractor firms. Properly interpreted, then, cross-sectional studies do not measure the full effect of a particular program, only the differential effect between sectors of the economy covered and not covered by the program.[14]

Office of Federal Contract Compliance Programs

With its ultimate threat of contract cancellation and debarment from future Federal contracts, the OFCCP is one of the major regulatory bodies through which governmental civil rights policy may affect the employment practices of private firms. In fact, existing empirical studies of the OFCCP are generally consistent with the view that the program

[13] The published time-series analyses use earnings data up to the year 1978. However, the black-white earnings ratio has been nearly constant since 1975. An update of the studies, extending the samples to the present, could possibly show weaker effects of Federal civil rights activity.

[14] For just such reasons, cross-sectional studies of Title VII, which covers almost all sectors of economy, are of questionable value. For examples of such studies that arrive at different conclusions, see Beller (1978) and Leonard (1984).

has increased the employment of blacks in firms with Federal contracts. The studies, however, do not provide strong evidence that the OFCCP has reduced black unemployment or increased black wages in the general economy.

All studies examining the effect of the OFCCP use the same basic statistical framework. This framework compares the employment percentages of various demographic groups within an employer's work force at two different points in time. These points are chosen to correspond to the employment situation before and after a change in the size or scope of the OFCCP's enforcement effort. A finding that Federal contractors increased their share of black workers at a faster rate than non-Federal contractors is taken as evidence that the program has benefited blacks.

The basic source of data is the EEO-1 data file. All private employers employing 100 or more employees, or employing 50 or more employees and having Federal contracts totaling $50,000 or more, are required to file EEO-1 forms with the OFCCP and EEOC on an annual basis. The EEO-1 form includes information on the location, industry, and Federal contractor status of the firm, and classifies its employment by race and sex within nine broad occupational groupings. A serious limitation of the EEO-1 form is that it does not include information on the wages, education, age, or prior work experience of the employer's work force. Thus, the studies of the OFCCP cannot be used to determine directly the OFCCP's effect on black wages or black unemployment.

Basic results from four representative studies of the OFCCP are presented in table 7.2. All of the studies find that the OFCCP has a positive effect on the employment of blacks relative to whites in firms with Federal contracts. The estimated magnitudes, however, vary widely from study to study. Jonathan Leonard (1984b) has found that Federal contractors increased the relative employment of black males at an average rate per year of 1.01 percent more than non-Federal contractors between 1974 and 1980. Morris Goldstein and Robert Smith, on the other hand, found an effect of only 0.04 percent per year between 1970 and 1972. Estimates of the effect of the OFCCP on the relative occupational status of blacks are also mixed. Of the three studies that investigate this issue, only Leonard (1984a), for the 1974–80 period, has found a strong positive association between contractor status and the occupational upgrading of blacks relative to whites.

One possible reason for the different estimates of the effect of the OFCCP involves the different time periods used in the different studies. Unfortunately, it appears that differences in statistical methodology also contribute to the differences in the estimated effect of the OFCCP. Using the same data but a different estimation method, Leonard (1984b) found the effect of the OFCCP on relative black employment to be almost twice as large as in his earlier study (1984a).[15] Even more disturbing, Goldstein and Smith found that not only the magnitude, but also the direction of the estimated effect of the OFCCP is sensitive to how the model is specified and estimated. In particular, using the estimation procedure of Orley Ashenfelter and James Heckman, Goldstein and Smith found that the effect of Federal contractor status was to *reduce* the employment of black males relative to white males between 1970 and 1972.

The sensitivity of estimates to the way the model is specified raises an obvious question: which is the correct specification? Regrettably, no study of the OFCCP has seriously addressed this issue.[16] In the absence of theoretical reasons for preferring one specification to another, all of the estimates in table 7.2 should, therefore, be viewed cautiously; different researchers examining the same data may arrive at different conclusions regarding the effect of the OFCCP.

Although partly clouded by sensitivity to model specification, the evidence in table 7.2 suggests that the OFCCP has increased the employment of blacks in firms with Federal contracts. The important policy question, however, is whether the OFCCP has actually improved overall employment opportunities for blacks. Specifically, has the OFCCP benefited blacks by reducing their incidence of unemployment and/or increasing their wages?

On theory alone, the increase in the demand for black labor in the Federal contractor sector should be expected to have at least slightly increased black wages. As previously noted, because of data limita-

[15] In his 1983 Department of Labor study, Leonard uses many different specifications and reports a much wider range of estimates.

[16] Goldstein-Smith and Leonard (1983) briefly discuss why the estimates may differ according to the estimation procedure, but they do not state which is the preferred procedure.

TABLE 7.2

Effect of the OFCCP on the Employment of Black Men Relative to White Men

Study:	Ashenfelter-Heckman (1976)	Goldstein-Smith (1976)	Leonard (1984a)	Leonard (1984b)
Time period:	1966-70	1970-72	1974-80	1974-80
Sample size (establishments):	40,445	74,563	68,690	68,690
% change in relative employment (annualized)[1]	0.82	0.04 (−0.49)[2]	0.58	1.01
BM/WM occupational upgrading:	Very minor	Insignificant	Strong upgrading	—

Note: Estimates in this table are not exactly comparable because of differences in model specification and time periods. To note the differences in model specification, the individual studies must be consulted.

[1] Effect of contractor status on black male relative to white male employment; for all the studies except Ashenfelter-Heckman, the figure in the table is the combined effect of Federal contractor status and compliance reviews (see Goldstein-Smith for a description of the methodology used to derive this effect). Ashenfelter-Heckman do not explicitly include a compliance review variable.

[2] Goldstein-Smith estimate when using the Ashenfelter-Heckman estimation procedure.

tions, the studies of the OFCCP cannot be used to determine directly the magnitude of the increase. Nonetheless, it is helpful to compare the timing of the growth in relative black earnings with the patterns of the OFCCP enforcement effort. Figure 7.1 shows that black earnings increased substantially between 1964–1974 and remained fairly constant between 1975–1984. Yet, the studies cited in table 7.2 suggest that the 1974–1980 period was marked by an especially vigorous OFCCP enforcement effort. Unless some unspecified factor was working to reduce the earnings of blacks during this period, the approximate constancy of relative earnings during a period of strong enforcement casts doubt on the success of the OFCCP in raising black wages.

The OFCCP's effect on black unemployment also remains unclear. Theory suggests that the OFCCP should have reduced at least marginally black unemployment. Again, however, data limitations preclude attempts to quantify the magnitude. Since the rate of unemployment of blacks increased substantially relative to that of whites during the 1970s, it is possible that black employment gains in contractor firms resulted largely from a reshuffling of black and white workers between noncontractor and contractor firms.[17] Thus, blacks who otherwise would have been employed in the noncontractor sector may have obtained jobs in the contractor sector (and vice versa for whites), but there is no evidence that the program increased the employment of blacks as a whole.

State Fair Employment Practices Commissions

In 1945 New York and New Jersey were the first States to pass legislation prohibiting discrimination in employment based on race and to establish commissions (FEPCs) with powers to enforce these laws. By 1959, 13 States, all nonsouthern, had enforceable antidiscrimination laws. The resources allocated to these commissions, however, were quite limited, and it is doubtful that they could have substantially affected overall black labor market status. The 1960s and 1970s saw an expansion not only in the number of States with such laws, but also in the level of their enforcement. Thus, the combined budgets of all FEPCs amounted to roughly $1.7 million in 1959, $10 million in 1968, and $29.5 million in 1975–1976.[18]

Little is known about the actual labor market effects of FEPCs. Most existing studies are anecdotal in nature and typically focus on the regulatory process as opposed to measuring actual labor market outcomes. An exception to this is a study by William Landes, which examined the effect of FEPCs in 1959.[19]

The Landes study was notable both for examining the effects of FEPCs and for investigating possible unemployment effects resulting from enforcement of civil rights laws. Landes compared labor market patterns in States with fair employment laws to those in States without such laws. After adjusting for differences among States in years of schooling, relative numbers of black versus white workers, degree of urbanization, and geography, Landes found: (1) relative black wages were approximately 5 percent higher in States with fair employment laws than in States without such laws; and (2) fair employment laws did not appear to be systematically related to racial differences in unemployment.

Comparing labor market patterns in States with and without antidiscrimination laws at a particular point in time, however, may distort the true effect of the laws. For example, it is possible that racial differences in wages were narrower in FEPC States even before the passage of fair employment laws. To investigate this possibility, Landes examined relative wages and employment patterns prior to the passage of such laws. Using 1949 as a benchmark (9 out of 13 States with such laws in 1959 enacted them after 1949), he found no systematic difference in relative wages in 1949 between States that, in 1959, did and did not have fair employment laws. Since in 1959 relative black wages were higher in fair employment practice States, it thus appears that enactment of fair employment laws actually did lead to a true increase in relative black wages. In contrast, differences between blacks and whites in unemployment appear to have been *smaller* in 1949 in States that by 1959 had passed fair employment laws. Landes concluded from this that fair employment laws actually increased the unemployment of blacks relative to whites.

[17] See fig. 1.2 in chap. 1 and the discussion and tables in chap. 2 for evidence on the divergence in black versus white unemployment rates in the 1970s.

[18] Sources are as follows: for 1959, Landes (1968); for 1968, Kovarsky and Albrecht (1970); for 1975–76, the Center for Policy Review (1977). The figure for 1975–76 refers to a 12-month period spanning 1975–76. These figures are crude approximations and include some expenditure on nonemployment activity.

[19] W. Landes (1968).

Landes' study of FEPCs is suggestive of how enforcement of civil rights laws can lead to both higher relative black wages and higher relative black unemployment, but its significance should not be exaggerated. He studied a period when the enforcement effort of FEPCs was quite limited, and his results are not necessarily applicable to the post-1964 period, when State government civil rights activity greatly expanded.

Conclusions

Studies reviewed in this chapter suggest that civil rights policies have contributed to the improvement in the relative earnings of black men. Studies based on time-series data have found an upward trend in relative black earnings after 1964 that cannot be explained by the 1948–1963 earnings trend or by changes in variables such as relative black educational attainment. Other studies are based on analysis of the OFCCP. These studies generally indicate that Federal contractors have increased their employment of blacks more than non-Federal contractors.

Because of data limitations, the studies do not provide conclusive evidence about the magnitude of the effect of civil rights policies. The time-series analyses do not include many important variables, such as changes in attitudes or changes in unmeasured skill factors, that may have contributed to the upward trend in relative black earnings. Because they are limited to the period after 1948, when earnings data first become available on an annual basis, these studies exclude the 1940s when, according to this report, the relative earnings of blacks increased faster than in any other single decade between 1940 and 1980. The omission of the 1940s from these analyses may result in an overestimate of the effect of civil rights policies on earnings growth after 1964. Given these limitations, it has not been established whether the contribution of civil rights policy to the growth in relative black earnings is large or small.

In contrast to time-series studies, which examine civil rights programs in the aggregate, studies of the OFCCP focus on a particular kind of affirmative action program. Although they find that the program is associated with increased black employment in firms with Federal contracts, they do not provide strong evidence that the program has reduced black unemployment or increased black wages in the general economy. That is, the program may have largely resulted in the shifting of employed men from one kind of firm to another. The fact that the relative employment of blacks declined significantly during the period under analysis raises a question whether black male employment was generally increased by the program. Similarly, the approximate constancy of relative black wages during a period of vigorous OFCCP enforcement (1974–1980) casts doubt on the success of the OFCCP in raising black wages.

In sum, research has not yet determined the precise role that civil rights policies have played in improving the labor market status of black men. Research in this area is complicated by the many forces, both public and private, that have operated to improve the economic status of blacks. The same forces that led to the passage of civil rights legislation by themselves may have broken down discriminatory barriers and influenced pubic attitudes about race. For example, the civil rights movement achieved landmark judicial and legislative victories, but the full effect of the movement went farther—generating among the American people a recognition of racial injustice that made additional gains possible.

It has not proven possible to identify the specific contributions of the various civil rights programs and policies. The Civil Rights Act of 1964 repealed the government-mandated segregation of the South and made other forms of institutionalized discrimination illegal. This alone likely broke down barriers for many blacks, and it also may have served as a catalyst in reducing the degree of prejudice among employers and white coworkers. In addition, it is possible that the effects of Title VII litigation and the pressures of the Federal contract compliance program may be important factors influencing the increase in relative black earnings. Unfortunately, existing empirical studies have not been able to disentangle the effects of these different types of civil rights activities.

Chapter 8

Unexplained Wage Differentials

Previous chapters have shown that a few key variables explain part of the upward trend in the relative earnings of black men and part of the current earnings gap between blacks and whites. The analysis has not, however, been able to explain all, or even most, of these patterns. This chapter provides a qualitative assessment of the various factors that seem likely to account for the unexplained components.

Factors Underlying the Trend

It was established in chapter 6 that although changing racial differences in characteristics such as schooling and geographic region could account for some of the narrowing in the wage gap between 1940 and 1980, they were not the primary forces underlying the trend. This same point is made in table 8.1, which shows changes in black-white earnings ratios over the 1940–1980 period.

The weekly earnings ratios rise considerably from cohort to cohort even when the comparison is confined to population groups narrowly defined by years of schooling, region, and age; and the rise within these detailed groups is not so far below the rise for all workers combined. For example, at ages 25–34, the overall increase in the earnings ratio between 1940 and 1980 was 30.5 percentage points, while the increase within schooling-region groupings was always greater than 20 percent in the South and 14.9 percent in the non-South. At ages 45–54, the overall rise was 28 percentage points, and the rise within detailed groups was even closer, never less than 24 percent.

In other words, even if racial differences in years of schooling and region of residence had not narrowed over the 40-year span, it appears that much of the observed narrowing of the racial gap in earnings still would have occurred. This suggests that other factors such as a broad decline in discrimination, governmental civil rights policies, and unmeasured changes in employment skills (due, for example, to improved school quality) are potentially important explanations for the increase in relative black earnings.

It is plausible that successive generations of black workers acquired more marketable skills than their predecessors and that these increases in skills are not adequately captured by years of school. The oldest cohorts of black men (ages 45 and over) observed in the 1940 census went to school around or before the turn of the century, largely in the rural South. Because the schools they attended were usually ungraded, it is believed that grades of school completed were inaccurately reported to the Census, resulting in inflated measures of schooling.[1] As graded schools became the norm, reporting of education improved. The result was an understatement of the true rise in the educational attainment of those black cohorts educated during the transition to graded schools.

The relative rise in the real educational attainment of blacks is also likely to be understated because of

[1] See the detailed discussion of issues concerning the measurement of years of schooling and of quality of schooling in chap. 4, and see Margo (1986).

TABLE 8.1

Change in Black-White Weekly Earnings Ratios Between Cohorts by Education, Age, and Region

	All years of school	0-7 years	8-11 years	High school	College
Ages 25-34[a]					
Non-South					
1940-1960	+ 7.1	+ 4.9	+10.7	+ 5.0	+ 0.5
1960-1980	+10.9	+13.4	+ 6.5	+ 9.9	+18.1
1940-1980	+18.0	+18.3	+17.2	+14.9	+18.6
South					
1940-1960	+10.2	+ 4.4	+ 4.6	+10.1	+12.7
1960-1980	+19.5	+19.2	+16.0	+16.3	+15.1
1940-1980	+29.7	+23.6	+20.6	+26.4	+27.8
All regions					
1940-1960	+14.8	+10.5	+ 9.3	+ 7.8	+ 8.7
1960-1980	+15.7	+22.0	+10.0	+10.7	+17.1
1940-1980	+30.5	+32.5	+19.3	+18.5	+25.8
Ages 45-54[b]					
Non-South					
1940-1960	+16.2	+19.0	+14.6	+18.1	+22.5
1960-1980	+ 7.0	+ 7.3	+10.6	+14.8	+23.5
1940-1980	+23.2	+26.3	+25.2	+32.9	+46.0
South					
1940-1960	+13.7	+12.8	+13.0	+22.9	+30.1
1960-1980	+13.2	+18.0	+11.3	+17.0	+ 8.2
1940-1980	+26.9	+30.8	+24.3	+39.9	+38.3
All regions					
1940-1960	+15.9	+16.7	+12.7	+21.3	+26.4
1960-1980	+12.0	+15.3	+10.0	+14.8	+17.3
1940-1980	+27.9	+32.0	+22.7	+36.1	+43.7

[a]Percentage point change in black-white ratios for persons ages 25-34 in year t and persons 25-34 in year $t+20$, where t = 1940, 1960.
[b]Percentage point change in black-white ratios for persons ages 45-54 in year t and persons 45-54 in year $t+20$, where t = 1940, 1960.

TABLE 8.2

Change in Black-White Weekly Earnings Ratios within Cohort by Education and Region

	All years of school	0-7 years	8-11 years	High school	College
Non-South					
1940-1960	+1.2	+ 4.8	+6.7	−1.2	*
1960-1980	+1.1	+ 7.2	+6.6	+8.6	+1.1
South					
1940-1960	+2.8	+ 1.2	+1.2	+2.0	+2.9
1960-1980	+5.8	+14.8	+7.9	+8.9	−1.6
All regions					
1940-1960	+7.3	+ 9.6	+6.8	+1.8	−8.4
1960-1980	+4.5	+14.4	+7.5	+8.7	+0.2

Note: Percentage point change in black-white ratio for persons ages 25-34 in year t and 45-54 in year $t + 20$, where t = 1940, 1960.

*Not statistically reliable.

the substantial improvement in school resources allocated to blacks compared to whites. For example, in 1920 the length of the school term for blacks in the South was 25 percent shorter than the term for southern whites and 40 percent shorter than the school term outside the South.[2] To the extent that a school grade corresponded to a school term, the educational value of a grade of school completed was likely to be lower for a black child than for a white child. Between 1920 and 1950, the racial gap in the length of the school term was largely erased, and there was also a substantial convergence in other measures of school quality such as the pupil-teacher ratio. Although the precise extent to which the convergence in school resources was translated into a convergence in academic achievement cannot be estimated, some such gains probably did occur.[3] It is also likely that a narrowing of racial differences in academic achievement would have contributed to the narrowing in the wage gap.

The hypothesis that improved school quality is an important source of the narrowing of the earnings gap can be explored by examining black-white earnings ratios for a cohort as it ages. Since formal education is typically completed by the time an individual enters the labor market, changes in black-white earnings ratios for each cohort as it ages should be largely free from the effects of changes in school quality and, for that matter, from the effects of family background and other characteristics fixed at younger ages. In fact table 8.2 reveals that black-white earnings ratios have increased significantly even within cohorts. This suggests that improved school quality and other cohort specific characteristics are not the only factors underlying the relative increase in black male earnings within specific schooling-region groups.[4] It does not rule out these

[2] See chap. 4.

[3] Educational "production function" studies that relate school inputs, such as pupil-teacher ratios and teacher experience, to students' scores on achievement tests have found only weak effects of school inputs on educational "output" (Hanushek, 1986). These studies, however, generally compare schools that differ in relatively minor ways compared to the huge differences found between black and white schools early in the century.

[4] These gains are particularly impressive in light of the expectation that blacks, starting from a lower skill base, would receive less training and have flatter earnings profiles as they age than would whites (see chap. 4.). Note also that within the South the effect of heavy outmigration might have been to lower the average skill level, since migration typically selects the most able,

factors as a part of the explanation because the within-cohort increases in earnings ratios are usually less than the increase between successive cohorts. For example, the within-cohort change between 1960 and 1980 among high school graduates in the South was 8.9 percentage points (table 8.2), while the between cohort change from 1960 to 1980 was 16.3 percentage points for the age group 25–34 and 17 percentage points for the 45–54 age group (table 8.1).

Declining labor market discrimination is an obvious candidate for explaining the relative gains in earnings for black cohorts as they age. It may also have contributed to the gain observed for successive generations of blacks entering the labor force. The 1940–1980 period saw a revolution in civil rights as legally enforced segregation (Jim Crow) was abolished, antidiscrimination policies were put in place, and racist views, once officially condoned, became increasingly unacceptable. The civil rights movement, broad legislation like the Civil Rights Act of 1964, specific policies such as affirmative action, and societal changes in racial attitudes all may have contributed: but no consensus has been reached on the specific contributions of each.

Changes in the attitudes of whites also seem to have been strongest between generations.[5] Evidently, increased urbanization, education, and economic development in the South were conducive to declining support for segregation. These changes in views have been found to be most evident among successive waves of young white adults, starting in the 1950s.[6] Changes in discriminatory views among the mass of white workers would have been particularly important in enabling unprejudiced employers freely to employ blacks to work alongside whites or to interact with white consumers.[7]

In sum, there is evidence, albeit circumstantial, that improvements in the quality of schools attended by blacks and declining discrimination in the labor market both contributed to the relative gain in earnings made by blacks during the 1940–1980 period. It has not been possible to say which factor dominated the trend.

leaving a lower average behind (see O'Neill, 1970). This, too, would depress the within-cohort gains in the South. The effect of migrants coming into the North is ambiguous, since the migrants from the South would likely have attended poorer quality schools than northerners, which might be counterbalanced by ability and motivational factors.

[5] See Hyman and Sheatsley (1964); Mathews and Prothro (1966); and Reed and Black (1985).

The Current Wage Gap and Unmeasured Characteristics

Although the wage gap narrowed substantially over the 1940–80 period, it has not been eliminated. As shown in chapter 6, after adjusting for years of school completed, region of residence, and other measurable characteristics, a weekly earnings gap remained of 12.6 percent for 25–34 year olds, rising to 24.3 percent for 55–64 year olds.

These are average differentials for an age group after adjusting for characteristics. There is considerable variation in the size of the earnings gap among detailed region-education groups and according to the earnings measure used (hourly, weekly or annual). The variation in the earnings gap in 1980 is shown in table 8.3. The differential is larger in the South than in the non-South, and it is larger among 45–54 year olds than among 25–34 year olds, particularly in the South. Racial differences in weeks and hours worked have a substantial effect on the earnings gap. For instance, among 25–34 year olds living outside the South, the gap is relatively small based on hourly earnings: 3.5 percent for college graduates, 9 percent for high school graduates, and 5.4 percent for those with 8–11 years of school. The differential is larger when measured by weekly earnings (ranging from 8.6 percent to 14.5 percent) and larger yet when measured by annual earnings (ranging from 11.7 percent to 20 percent).

It is a matter of judgment as to which is the correct measure. Hourly earnings reflect compensation for a fixed amount of time worked, and in this sense it is an appropriate measure for making comparisons between different groups that may have different work patterns. In fact, if the number of hours worked during the year were based entirely on choice (choice to take a second job, work overtime, search intensively for work when unemployed), hourly earnings would clearly be the appropriate measure. Weeks and hours worked are not wholly voluntary, of course, because of layoffs, uneven options for overtime work, and forces in the economy that affect the availability of work.[8] Moreover, the strength of these involuntary factors varies by skill and is affected by discrimination. To

[6] Ibid.

[7] See chap. 3 for a discussion of the implications of coworker and consumer discrimination for the labor market situation of blacks.

[8] See the discussion of racial differences in labor force participation, unemployment, and hours worked in chap. 2.

TABLE 8.3

Black-White Earnings Gap in 1980 by Region, Age, and Education

	25-34 years of age			45-54 years of age		
	Annual earnings	Weekly earnings	Hourly earnings	Annual earnings	Weekly earnings	Hourly earnings
Non-South						
8-11 yrs	20.0	12.7	5.4	15.2	12.6	6.9
High school	19.3	14.5	9.0	18.9	15.8	10.7
College	11.7	8.6	3.5	28.5	26.1	20.4
All levels	20.3	15.1	8.6	27.8	24.9	19.9
South						
8-11 yrs	22.7	19.6	13.2	30.8	27.7	21.3
High school	23.9	20.5	13.6	30.1	27.9	23.5
College	19.0	16.5	9.8	37.3	33.2	28.7
All levels	26.7	22.9	16.2	39.4	36.6	31.2
All regions						
8-11 yrs.	22.8	18.4	12.9	23.7	20.9	15.4
High school	23.1	19.5	14.1	24.2	21.5	19.1
College	15.4	13.0	7.8	33.1	29.9	23.2
All levels	24.7	20.6	14.8	34.6	31.8	31.3

Note: The earnings gap is measured as 100 percent minus the black-white earnings ratio.

Source: Appendix D.

the extent that involuntary forces dominate, weekly or annual measures of earnings are more appropriate measures of the effects of both skill and discrimination on earnings. Thus, all three measures of earnings merit examination.

No conclusion can be drawn from table 8.3 about the extent to which current labor market discrimination reduces the earnings of black men in 1980. The various measures of the earnings gap cannot realistically be attributed solely to racial discrimination in the labor market, but also reflect omissions of data on worker characteristics, such as the quality of schooling and family background.[9]

Achievement tests are often used as a way of assessing the marketable knowledge and skills acquired in schools. The evidence reviewed in chapter 4 showed large differences in scores between blacks and whites with the same nominal amount of schooling.[10] These differences have been attributed to differences in family background (parents' education and occupation and family income) as well as to differences in the quality of schools attended.[11]

Chapter 4 also reviewed several studies that have attempted to measure the link between earnings and the skills measured by test scores. Based on the findings of these studies, a rough estimate can be made of the extent to which the black-white earnings gap can be attributed to racial differences in the factors reflected in test scores. Applying estimates from a study by John Hause, about 20 percent of the weekly earnings gap for 25–34 year olds could be explained by score differences at the high school level and about 40 percent at the college level. Based on a study by Zvi Griliches and William Mason, about one-third of the gap for all schooling levels combined could be explained by differences in scores.[12]

These results should be regarded as conservative estimates of the proportion of the earnings gap attributable to racial differences in unmeasured skill factors. The studies on which the estimates are based understate the relation between scores and earnings, perhaps by a significant margin.[13]

In summary, the extent to which current discrimination in labor markets reduces the earnings of black men cannot be answered definitively. Comparing the earnings of black and white men with the same schooling, age, and region, a differential still is found in 1980. There is persuasive evidence that a part of this "unexplained" gap is attributable to unmeasured differences in the knowledge and skills gained in school. These differences, as measured by a large gap in achievement test scores, potentially reflect factors such as relatively inferior schooling and a disadvantaged family background. Persistent racial discrimination may well account for part of the differential, but its share cannot be measured with available data.

[9] Of course, broadly speaking, racial differences in the quality of schooling and parents' income and education may also stem from discrimination. This, however, is past discrimination, taking the form of governmental discrimination that provided a lower quantity and quality of schooling to blacks as well as labor market discrimination affecting parents' opportunities. It is to be distinguished from current discrimination that affects the earnings and employment of individuals entering the labor market with a given set of skills.

[10] Black male scores on the Armed Forces Qualification Test are close to 30 percentiles below those of white males at the high school and college levels; the differences are smaller at lower educational levels. See chap. 4 for a discussion of differences in various kinds of tests.

[11] In a preliminary analysis of the determinants of school achievement, a significant link was found between family background and scores on the AFQT. For example, parents education and employment in a white-collar occupation are significantly positively related to scores; a large number of siblings is associated with lower scores.

[12] See the discussion of these studies in chap. 4.

[13] The studies typically use data sets that contain a much richer catalogue of variables than are available in the census data—variables such as parental income and education, prior earnings, military performance, etc. The reported relation between scores and earnings typically shows the *net* effect of scores, holding constant an array of other factors that affect scores or are colinear with scores. The effect of scores on earnings, holding constant only schooling, region, and age, would be significantly larger; and it is this relationship that is needed to adjust our measure of the earnings gap, which is based on the more limited census variables. See chap. 4 for further discussion.

Concluding Comments

Changing racial differences in measured characteristics, like years of schooling and geographic region, account for some of the narrowing in the wage gap between 1940 and 1980. According to the data analyzed, however, these changes were not the primary forces underlying the trend.

Black-white earnings ratios rose considerably from generation to generation even when the comparison was confined to population groups narrowly defined by years of schooling, region, and age. There is evidence that improvements in the quality of schools attended by blacks and declining discrimination in the labor market both contributed to the relative gain in earnings made by blacks during the 1940–1980 period.

The decline in labor market discrimination appears to have occurred both before and after the Civil Rights Act of 1964 was passed. In the earlier period, the decline in discrimination may have been prompted by events, such as World War II, which raised the consciousness of white Americans about racial prejudice. In the recent period, the civil rights movement and government antidiscrimination policy undoubtedly have played a positive role.

Although the wage gap narrowed substantially over the 1940–1980 period, it has not been eliminated. After adjusting for years of school completed, region of residence, and other measurable characteristics, a gap in weekly earnings of 12.6 percent for 25–34 year olds remains. The remaining gap is in part attributable to unmeasured differences in worker characteristics that affect productivity. For instance, racial differences in achievement test scores suggest that black-white differences still exist in terms of knowledge and skills acquired in school. Persistent racial discrimination in labor markets may well account for part of the current differential in earnings, but its share cannot be determined with available data.

What Has Happened Since 1980?

The black-white gap in earnings has remained roughly constant since 1975. The constancy of the gap during the 1980s is noteworthy because that period was characterized by the worst recession since the 1930s. (The overall male unemployment rate grew from 5.1 percent in 1979 to 9.9 in 1982 and 1983 and then fell back to 7.0 in 1985.) In view of the greater cyclical sensitivity of black earnings and employment, it would not have been surprising to see the relative earnings and employment status of blacks deteriorate and then rebound during this period. Such a pattern seems to appear in annual earnings data from the Current Population Survey. However, the black-white ratio of annual earnings for full-time year-round workers stayed relatively constant during the period—about 70 percent. Differences in labor force participation rates have also remained constant, breaking a decades-long trend of relative decline in black male labor force participation.

Issues for Future Research

This report has identified several issues that remain unresolved and warrant additional research. The following are particularly important:

- Existing research has not been able to assess fully the effects of specific civil rights programs and policies on the economic status of blacks. For instance, although studies of affirmative action have found that Federal contractors increased their employment of blacks more than noncontractors, it is not known whether the men hired by contractors would have been employed in good jobs even without the program or whether the program resulted in a *net* increase in black male employment. More research is needed to determine the full effect of civil rights programs on the earnings and employment of black men.
- This report documents that there is still a substantial differential in the educational attainment of black and white men in terms of both years of school completed and scholastic achievement. A considerable body of research, including this report, has demonstrated the importance of schooling as a means of upward mobility. Future research should investigate the various public and private factors that affect scholastic achievement.
- The decline in labor force participation among younger black men, at a time when other indicators of economic success (i.e., earnings) have been improving, is not well understood. Several causal factors were suggested, including worsened employment opportunities, increased involvement in crime and imprisonment, and declining marriage rates. These and other possible factors, and their interactions, should be investigated in greater depth. Research dealing with effects of diminished work attachment on the future earnings and employment of younger men is also needed to help assess the importance of the recent trends.
- Accurate measures are needed of the possible upward bias in earnings resulting from the decline in labor force participation. Existing research has used indirect statistical methods to estimate the possible effect of "selection bias" on earnings gains and on the black-white earnings gap. Direct information on the prior earnings of those who withdraw from the labor force is needed before any firm conclusions can be drawn. If the earnings gains of black men are found to be seriously biased by labor force withdrawal, then it would be necessary to reevaluate the extent to which discrimination has abated and, specifically, the extent to which civil rights policies have raised the economic status of black men.
- The failure of the black-white gap in unemployment to narrow is puzzling in view of the convergence in education and occupational status. Research on this subject is limited, and additional theoretical and empirical work is needed.

Statement of Chairman Clarence M. Pendleton, Jr.

This report is another top-quality product of the Civil Rights Commission—an outstanding example of unbiased and professional research, advanced methodological techniques, and most important, commitment to alerting the Nation to the harmful effects of discrimination and the beneficial effects of reducing discrimination. I am pleased that this report has already received wide coverage and wide praise, and I look forward to future Commission volumes on the status of other groups in American life.

But if this report is a tribute to the diligence of our staff, it stands as a testament to the struggles—and achievements—of black men in America. Faced with slave codes that forbade them to read, confronted by a poor southern agricultural economy, denied equal opportunity until the passage of the Civil Rights Act in 1964, black men have nevertheless pushed themselves—closing the wage gap by nearly half between 1940 and 1980.

When it comes to education, black men have overcome enormous hurdles to win opportunities for themselves. In 1940, for instance, southern black men had just an average of 5 years of schooling. Today, the average black man in the South has close to 11 years of schooling. By 1980 the national difference in years of schooling between black and white men was just 1.5 years. No one made these black men stay in school; they did it themselves.

Some individual achievements elicit amazement and respect. All-black, segregated Dunbar High School in Washington, D.C., sent 34 of its graduates to Amherst between 1892 and 1954. One-fourth of those admitted made Phi Beta Kappa. Young blacks hitting the books in the face of segregation—that speaks volumes about their character. It also suggests that a quota is no way to motivate students, for it only sends the message that they can't make it on their own.

The massive, arduous migration of blacks northward is one of the inspiring stories in American history. As the report notes, in 1940 more than three-fourths of blacks lived in the South. Today, it's barely half. These days the gains from migration may be less substantial. But the point remains the same: when blacks have made the trek to prosperous areas of the country it has paid off.

The rising income of black men recalls Irving Kristol's comment: "We *know* how most people, most of the time, emerge out of poverty." His answer is the obvious one: a growing economy and individual motivation are the springs that have propelled most groups in American life. Quotas and special preferences, by contrast, are a dubious method of promoting economic success.

True, this report acknowledges that civil rights laws and enforcement have boosted the incomes of black men in America, but it also suggests that there is no substitute for self-help—whether it means staying in school or migrating to better jobs. This is what really works. Yes, blacks have traveled the

toughest roads in American history, but the path to prosperity is the same for all Americans.

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Statement of Commissioner John H. Bunzel Joined by Vice Chairman Murray Friedman and Commissioners Esther G. Buckley and Robert Destro

This report is the first of several planned volumes of the Commission's incomes of Americans project. When the Commission adopted this project in 1984, at the suggestion of Commissioner John H. Bunzel, the intention was to examine thoroughly the myriad of factors, including discrimination, that account for the differences in incomes between men and women of different racial and ethnic groups in America. It soon became clear that an exploration of *all* the relevant determinants—education, region, discrimination, etc.—of *all* the relevant groups would be too voluminous to be published in a single study. Future volumes will examine the conditions of many other racial and ethnic groups in American life, but this first volume is confined to an exploration of the economic progress of black men in America.

Unfortunately, the history of discrimination against black men in America is still being written. One need only read the newspapers to know that black men still face violations of our nation's antidiscrimination laws. And one need only apply a bit of common sense to recognize that black men still cope with a legacy of segregation—officially sanctioned until less than 25 years ago.

The great virtue of this report is that it unearths new facts about black men in America that are not commonly known and not easily discerned. It is a thorough analysis of the obstacles black men have faced and continue to face. And it also illuminates those factors that have allowed black men to close the earnings gap from 44 percent of white men in 1940 to 72 percent in 1980.

We are gratified that scholars with different views and interests have commented favorably on this study, including Reynolds Farley, University of Michigan; Nathan Glazer, Harvard University; Glenn C. Loury, Harvard University; Barry Chiswick, University of Illinois-Chicago; Orley Ashenfelter, Princeton University; Robert Margo, Colgate University; and Stephan Thernstrom, Harvard University.

We are especially impressed by the breadth of the report. Education, religion, occupation, government programs, economic growth—virtually every factor that might account for the rise in the earnings of black men over the past 40 years is scrutinized, utilizing sophisticated social science methodologies. While other studies have focused on a few sources of black income gains, this study examines the whole spectrum of factors. No issue is sidestepped.

Furthermore, the report makes use of and examines newly available census tapes from the 1940s, a decade of enormous significance to the economic progress of black men. As originally designed, the study was limited to the period from 1950 to 1980, but the availability of new data from the 1940s proved to be an unexpectedly rich resource, offering a fuller picture of the condition of black, men in post-World War II America. It showed that the boost in black earnings caused by the economic

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expansion of World War II was not ephemeral. Black men not only gained ground in the 1940s, but held it during the 1950s. Indeed, the finding that the incomes of black men climbed sharply during the 1940s and 1960s—both decades of impressive *nationwide* economic growth—suggests that blacks, more than Americans on average, benefit from a robust economy. One caveat, however: the data presented here suggests that the efforts of black men themselves—whether spending more years in school or undertaking difficult migrations—account for much of their progress.

From such a rigorous and wide-ranging study come difficult and sometimes subtle findings that are unlikely to serve the interests of those on the left or the right who regularly look for results to support their own political agendas. The report underscores, for instance, the decline in prejudice and discrimination in America that has surely benefited black men, allowing them to take advantage of employment and educational opportunities heretofore denied them. Yet the report does not rush to a definitive or absolute judgment about the role that civil rights laws and their enforcement have had in tempering prejudice. It reaffirms what is not in dispute—that these laws have had a substantial impact. But it also makes clear that this impact is only one of a cluster of influential factors that is not readily identifiable, by itself, in a strict cause-and-effect manner. Those who label affirmative action as completely ineffectual, or even an economic burden for blacks, will not find political fodder in this study. Nor will the report satisfy those who insist that affirmative action is the predominant factor in promoting black economic progress. As is so often the case, the truth that emerges from scholarly research is more contingent than final.

Finally, we are pleased with the dispassionate tone that runs throughout the pages of this report. Contrary to what some have said (many of whom have not read the report in its entirety), there are no villains here. Government programs, for example, are neither belittled nor dismissed. It is merely observed that certain Federal transfer payments, most notably social security, have allowed disabled black men to leave the labor force at rates higher than white men. Some have called this conclusion "diabolical" and "pernicious." That anyone could subject the data presented here to such verbal abuse leaves us baffled and disappointed.

It should be emphasized, finally, that this study is not the last work on the economic progress of black men. The report itself identifies several unsolved issues for the research agendas of social scientists. We believe that more research is needed to examine and explain the differential in wages of various groups in American society. We encourage other scholars to pursue the line of inquiry begun here. (Some suggestions are offered in the Executive Summary.) Only by understanding and identifying the obstacles facing black men can we hope to find solutions that work. And only then can we build the equal opportunity society we all want.

Dissenting Statement of Commissioners Mary Frances Berry, Francis S. Guess, and Blandina Cardenas Ramirez

In stark contrast to the emphasis of this report, black male unemployment and underemployment remain serious problems in our country. The Commission had an opportunity to make a significant contribution to policymaking designed to alleviate the problem by analyzing the elements that account for progress and for its absence. Instead, we are presented in this report with definitive conclusions based on an analysis of economic data that most scholars conclude should not be be the basis for definitive conclusions and that will not facilitate solutions to the problem. We are provided with policy pronouncements that are in most cases no more than a rehash of a Department of Labor-financed Rand Corporation study by James Smith and Finis R. Welch, "Closing the Gap," which was released to the public in February 1986 and has the same methodological problems. Mr. Welch is ubiquitous. In addition to being the principal researcher on the Commission's school desegregation study, he is also the chairman of the advisory committee responsible for the report approved today.

Today's report concludes essentially that social security disability retirement for older black men and AFDC and other transfer payments have reduced labor participation rates for black men, thus reducing economic progress. One-sided evidence is presented for the first proposition, and no evidence for the second. These conclusions may lead policymakers to believe that black workers who are seriously disabled should be denied disability payments. Given the high rates of hypertension and other cardiovascular diseases in the black community, as well as the greater likelihood that black men who have jobs work in hazardous environments, such a conclusion would be pernicious at best. Also, scholars have found that while black adult workers apply for social security disability at a higher rate than whites, they are less likely to be designated eligible to receive such benefits.

The emphasis on transfer payments as a cause for nonparticipation in the labor force unnecessarily directs attention away from the fact that most unemployed young black males do not participate in transfer programs. In addition, the effects of demographic considerations, such as the projected declining numbers of young people available to work, are not even analyzed.

The report also attempts to undercut previous scholarly studies that attest to the importance of civil rights enforcement. This undercutting is achieved by using as a touchstone whether overall black employment was enhanced as a result of Title VII and OFCCP. That is precisely the wrong question. The purpose of outlawing employment discrimination and requiring affirmative action was to increase the opportunities for qualified blacks to gain better paid employment. The programs have done that and indirectly have improved the prospects of some blacks. They were not designed with the idea that all blacks would have their employment thus guaranteed. In addition, available data on the employment picture for educated blacks, given the decline in Federal emphasis on affirmative action

enforcement since 1980, would provide a much needed corrective to the analysis in the report.

The most striking failure of the report is to analyze the demand side of the picture, including such matters as the economy, trade deficits, budget deficits, and deindustrialization in "smoke-stack" industries. There is an assumption that jobs have been freely available to every person who has wanted one in every period since 1940. Such a conclusion is patently false.

A study analyzing how improvements in education and motivation, along with reductions in narcotics selling and addiction and other criminal activities, and an economy that produced enough jobs, *and* strong employment discrimination enforcement could improve the economic progress of black men would make a major contribution to public policy. This is not such a study.

Appendix A

Data Development

Background

This appendix documents the construction of files used to analyze long term trends in earnings and labor force status. The sources of data are the decennial Censuses of Population conducted by the U.S. Bureau of the Census between 1940 and 1980. These surveys are unique in that they contain information from a very large number of individuals over an extended number of years about earnings in the previous calendar year, weeks and hours worked, and demographic characteristics.

Several new sources of decennial census data have become available to researchers recently. Microdata samples from the 1980 census were released in 1983, and similar information from the 1940 and 1950 censuses became available in 1984, as a result of a long term archival project sponsored by the Census Bureau. Along with similar data from the 1960 and 1970 censuses, which have been available for several years, these sources of information permit a comprehensive review of long term market trends.

The task of data development is defined by the issues to be analyzed. Principally, these topics include: analysis of labor force status (employment, unemployment, etc.), and earnings (means and variances for annual, weekly, and hourly earnings). It is necessary to tabulate the data on the basis of detailed demographic categories, including age, race, sex, education, region, etc.

In order to simplify data processing and analysis, summary (or grouped) data files were designed and constructed. These files simplify subsequent data processing by partially aggregating available information into data sets that incorporate similar variables and record formats. Each of the five censuses have been grouped according to a common format. The constructed files are sufficiently flexible that tabulations can be generated at both detailed and higher levels of aggregation. The summary files greatly reduce the cost of subsequent data processing compared with direct manipulation of the microdata files. The 1980 census alone, for example, contains information on more than 2 million individuals. Unstructured processing of this volume of information (multiplied by the use of several censuses) would be prohibitively expensive.

For each year, the summary files contain information on labor force status and earnings for groups of individuals cross-classified on the basis of the following "cell-defining characteristics": age (10), race (2), martial status (2), employment class (3), industry (4), region (4), weeks and hours worked (8), and years of schooling completed (6). These dimensions are generally conformable across censuses, and for each group a number of summary variables are tabulated.

There have been several conceptual changes with respect to the measurement of labor force status and earnings over the past 40 years. To the extent such changes affect the development of conformable working files, they are described below. One notable example is the use of the concept of "full-time equivalent weeks worked" in 1940 compared to the enumeration in later censuses of the number of weeks in which any work was performed. Similarly, the only earnings information collected in 1940 reflects wages and salaries—data on self-employment income were not collected.

TABLE A.1

Summary File Characteristics

Census survey year	Summary cells[1]	Individuals represented
1980	80,208	1,444,000
1970	62,684	1,192,100
1960	52,832	1,043,000
1950	31,136	291,130
1940	27,031	854,380

[1]Each cell, or observation, represents a unique combination of the cell-defining characteristics, e.g., sex, age, race, listed above.

Input and Output File Characteristics

Basic Characteristics of Input and Output Files

The summary files have been developed directly from Census Bureau public use samples. For 1940 and 1960–1980, the basic public-use samples reflect 1/100 samples of the U.S. population. For 1950, however, data on labor market variables are available for only "sample line" records that constitute a 1/330 sample of the U.S. population.

In 3 years more than one public-use sample is available to the researcher. The 1980 data are drawn from the "C" sample; 1970 data reflect individuals who answered the "5 percent" questionnaire; and for 1940, the self-weighting sample is used.

All summary files incorporate information on individuals ages 16–64 in the noninstitutional population, including members of the armed forces.

The summary files contain observations defined by a specific interaction of the cell-defining characteristics described above. The number of nonempty cells in the constructed files and the number of individuals reflected in these data sets are described in table A.1.

The summary files were constructed by Commission staff to be used in a number of studies. Not all of the variables described below are used in the analysis of adult black and white men included in this report.

Cell-Defining Characteristics

As described above, the census summary data files all utilize the same basic format and variables. Each contains information on groups of individuals defined by the interaction of the cell-defining variables. The definition of selected characteristics and their comparability across censuses is detailed below.

1. Age

0 = 16–19
1 = 20–24
2 = 25–29
3 = 30–34
4 = 35–39
5 = 40–44
6 = 45–49
7 = 50–54
8 = 55–59
9 = 60–64

2. Region

1 = Northeast
2 = North Central
3 = South

4 = West

Data on Alaska and Hawaii are not available prior to 1960. For 1960 to the present, these States are included in the West.

3. Employment Status

1 = Self-employed
2 = Salary workers
3 = Unpaid family workers and others

For the 1970 and 1980 censuses, the self-employed are defined to include individuals with either incorporated or unincorporated businesses. This maintains consistency with earlier censuses but differs from current census definitions that include only the latter as self-employed. For 1940 the self-employed are defined to include "employers" and "individuals working on own account."

The "salary workers" category includes both wage and salary workers and government workers. Government workers, however, can be identified through the industrial sector classifier, as described below. The residual employment class category includes unpaid family workers and individuals who have not worked in previous years. Employment class questions refer to the current or most recently held job. This job may differ from that held in the previous year (which would be reflected in reported earnings).

4. Industry

1 = Agriculture
2 = Private, nonagriculture
3 = Government
4 = Other

Industry categories are defined by a combination of the industry and employment class variables. All individuals coded as Federal, State, or local government employees, except members of the armed forces, are counted as government workers (category 3). Categories 1 and 2 include only private sector workers and are based on industry codes for current or most recent job.

For 1950–1980, the "other" category includes individuals who have not worked in (at least) the previous 5 years as well as members of the armed forces. Individuals in the armed forces, however, are the only members of this group who also report earnings (the earnings of members of the armed forces can be identified uniquely). In 1940 the residual category includes "workers on emergency public service projects" as well as individuals currently out of the labor force (even if they had earnings in 1939). Of the individuals included in this category, only the "emergency" workers can have earnings. The armed forces cannot be uniquely identified from 1940 data.

For the censuses, industry questions refer to the current or most recently held job. This, again, may differ from that of a job held in the previous year, which is reflected in reported earnings.

5. Marital Status

1 = Currently married
2 = Not married

The "currently married" category is defined to include all individuals who are married with a spouse either present or absent. The "not married" category includes individuals who are either separated, widowed, divorced, or never married.

6. Educational Attainment

1 = 0–7 years of schooling completed
2 = 8–11 years of schooling completed
3 = 12 years of schooling completed
4 = 13–15 years of schooling completed
5 = 16–17 years of schooling completed
6 = 18+ years of schooling completed

In 1940 and 1950, the open-ended educational category reflects 16+ years of schooling completed. All such individuals are included in category 5.

7. Labor Force Attachment (1950–1980)

1 = *Part-year/At work:* Nonzero earnings; 1–39 weeks worked last year, positive hours worked in survey week; not enrolled in school.
2 = *Part-year/Not at work:* Nonzero earnings; 1–39 weeks worked last year, zero hours worked in survey week; not enrolled in school.
3 = *Full year/Full time:* Nonzero earnings; 50+ weeks worked last year; 35+ hours worked in survey week; not enrolled in school.
4 = *Most year/At work:* 40+ weeks worked last year; positive hours worked in survey week; not enrolled in school.
5 = *Most year/Not at work:* 40+ weeks worked last year; zero hours worked in survey week; not enrolled in school.
6 = *Nonworking students:* Currently enrolled in school, did not work last year.
7 = *Working students:* Currently enrolled in school, worked last year.
8 = *Nonworkers:* Nonstudents, did not work last year or zero earnings.

The labor force attachment classifier is a key element in defining applications of the file. It is based on (i) the number of weeks in which an individual worked in the previous calendar year and (ii) the

number of hours an individual worked in the survey week. The latter represents the only information available on hours per week that are available before 1980 from the decennial censuses.

This classifier can be manipulated in alternative ways to produce measures of current labor force status, annual and weekly earnings, and hourly earnings. To produce measures of labor force status (unemployment rates, labor force participation rates, etc.) for various demographic groups, aggregates are taken over the population—all possible values of the labor force attachment classifier are included. For determining annual and weekly earnings measures, the sample is restricted to individuals who worked in the previous calendar year (categories 1–5, 7). For determining hourly earnings, the sample needs to be restricted to individuals with positive hours in the survey week (categories 1, 3, 4). This, of course, excludes individuals who were unemployed or out of the labor force in the survey week. The impact of their exclusion on earnings measurement is analyzed in appendix B.

The 1940 census utilized a different concept for measuring weeks and hours worked by attempting to determine "full-time equivalent (FTE) weeks worked," as opposed to the number of weeks in which an individual did any work. Full-time equivalent weeks calculations were based on the regional norm for full-time hours or 40 hours per week. As a result of this alternative treatment of weeks and hours worked, labor force attachment classifiers for the 1940 file are not fully comparable with those for other years. The 1940 categories are as follows:

1 = *Part-year:* Nonzero earnings; 1–26 FTE weeks worked, not enrolled

2 = (not defined)

3 = *Full year/Full time:* Nonzero earnings; 50+ FTE weeks, not enrolled

4 = *Most year:* 27–49 FTE weeks; not enrolled;

5 = (not defined)

6 = *Working students:* Currently enrolled, worked last year.

7 = *Other students:* Currently enrolled, did not work last year.

8 = *Nonworkers:* Did not work last year; zero earnings; nonstudents.

Summary Variables

For each of the groups defined by a unique interaction of the above characteristics, 18 summary variables are tabulated. These variables are defined and explained below:

1 - Cell Population Count: Unweighted person count

2 - Cell Count: Employed

3 - Cell Count: Unemployed

4 - Cell Count: Out of labor force

5 - Cell Count: Armed forces (1950–1980) and (1940) workers on emergency public projects

6 - Cell Total: Years of schooling completed

This variable is used to calculate mean years of schooling completed. It is necessary to impute values for open-ended schooling category. For 1960–1980, individuals with 18+ years completed were imputed a value of 19. This estimate was derived from 1980 census data. For 1950 the cutoff was 16+ years, and a value of 17.0 was imputed for males, 16.7 for females. For 1940 the cutoff was 17+ years, and 18.2 was imputed for males and 17.9 was imputed for females. These latter figures were derived from 1960 census tabulations.

7 - Cell Count, Attending School

8 - (Census) Cell Count, Native Born

9 - Cell Total, Weeks Worked (1950–1980)

This question refers to weeks worked in the previous calendar year. It is not defined for 1940. In 1960–1970, only interval measures of weeks worked were defined. To maintain comparability, an identical specification was imposed for each year. The following means were calculated from 1980 census data and imputed for the intervals: (1–13 weeks: 8.1 weeks imputed; 14–26: 20.8; 27–39: 33.1; 40–47: 42.4; 48–49: 48.3; 50–52: 51.8).

10 - Cell Total, Total Hours Worked (survey weeks' hours).

For 1950–1980, this variable is constructed as weeks multiplied by hours in survey week. The following values were used to recode hours' intervals: 1–14: 8.8; 15–29: 20.9; 30–34: 31.2; 35–39: 36.5; 41–48: 45.2; 49–59: 51.9; 60+: 67.5. For 1940 this variable is calculated as full-time equivalent weeks multiplied by 40.

11 - Cell Total, Total Hours Worked (usual hours)

Available only from 1980 census. Defined as weeks multiplied by usual hours per week in previous calendar year.

12 - Cell Total, Wage and Salary Income

This variable (as well as 13 and 14) refers to earnings in the previous calendar year.

13 - Cell Total, Self-Employment Income

TABLE A.2

Conditional Means of Earnings for Males at Truncation Limit

Year				1980	1970	1960	1950	1940
Reporting limit ($1,000):				75	50	25	10	5
Sex	*Race*	*Educ.*	*Age*			*Level (000s)*		
M	White	LE 15	LE 34	105	70	35	13.4	7.2
M	White	LE 15	35+	110	74	38	14.9	8.3
M	White	16+	LE 34	112	74	38	14.5	7.7
M	White	16+	35+	136	82	44	18.7	15.2
M	Nonwhite	LE 15	LE 34	108	86	38	13.1	7.4
M	Nonwhite	LE 15	35+	108	71	41*	13.1	7.6
M	Nonwhite	16+	LE 34	106	89*	41*	11.6*	8.0*
M	Nonwhite	16+	35+	143	99	48*	15.0	7.4

*No individuals in this category exceeded reporting limit. Values for these cells were assigned by assuming a proportional relationship with other cells.

This information was not collected in 1940. For 1950–1970 this includes farm self-employment income.

14 - Cell Total, Farm Self-Employment Income
This variable is defined for 1980 file only.

15 - Cell Total, Usual Hours per Week (continuous values)
This variable is defined for 1980 file only and refers to previous calendar year.

16 - Cell Total, Hours in Survey Week (recoded values)
This variable is not defined for 1940 file.

17 - Cell Total, Weekly Earnings

18 - Cell Total, Age

Means for Open-ended Earnings Intervals

A final issue that was addressed was the imputation of earnings for individuals with earnings above the reporting limit. Estimates of conditional means were developed using the Pareto method (see Technical Documentation, 1980 Census of Population, p. 164). Conditional means were estimated for eight demographic groups. The "preceeding interval" used in construction of these estimates was set at the 65th percentile of the demographic-group-specific earnings distribution. As a rough check on the accuracy of the Pareto method, the mean level of wages and salaries for individuals with income above $75,000 (the 1980 census cutoff) was calculated from the microdata used to construct IRS Statistics of Income, which are not truncated. The overall conditional mean was $122,000 from the IRS data, $124,000 using the Pareto technique on census data. The full set of conditional means for all years is listed in table A.2.

Conditional means were also imputed for individuals who report the maximum allowable losses. This is not relevant for 1940, where only wages and salaries were reported. In 1950 losses were noted, but values were not reported. Roughly 65 percent of individuals with losses reported the maximum possible amount: -10,000 in 1960–1980. The following values were imputed for individuals with losses at the truncation point: 1950: -6,500; 1960: -10,000; 1970: -15,000; 1980: -20,000.

Appendix B

The Impact of Sample Definition on Relative Earnings

Background and Issues

The analysis of earnings trends requires that the populations of interest be consistently defined. Operational decisions are required about the treatment of classes of workers that, for various reasons, present unique problems with respect to the measurement or interpretation of earnings. Such groups, for example, include members of the armed forces, students, unpaid family workers, and the self-employed. Decisions about the inclusion or exclusion of such groups affect estimates of relative earnings patterns and trends. This appendix examines the sensitivity of earnings measurement to the inclusion or exclusion of such groups.

Competing goals must be considered when selecting the sample for analysis. First, it is desirable to utilize as much of the available data as possible. A second goal is to assess "total" compensation, which includes nonpecuniary as well as monetary rewards. Such ideals, however, often conflict with the limitations of available data and the desire to present easily interpretable results. Examples of special problems are discussed below:

Armed forces: The distinction between military and civilian employment has become increasingly blurred in recent years as the armed forces compete in the labor market for workers. Historically, however, conscription has permitted the armed forces to fill certain manpower needs without raising wages. Military pay thus might not fully reflect workers' productivity. The uniqueness of the military employment, however, is often overstated. Even at the height of the Vietnam conflict, for example, only 40 percent of military accessions were draftees. The military must compete for reenlistments and career personnel. Nevertheless, measurement of military compensation is particularly difficult because a large share of compensation in the armed forces is "in kind," i.e., food, shelter, clothing.

Unpaid family workers: An extreme example of problems in measuring compensation is reflected in the class of "unpaid family workers"—individuals who work without pay in a family farm or business. Although these individuals produce goods and services for the marketplace, they are not paid a regular wage. Instead, their earnings are implicitly counted with those of other family members. Fortunately, this group makes up a very small share of the labor force.

Students: Individuals enrolled in school also complicate the interpretation of labor force data. Most students participate in the labor market at some time during a given year, but they differ in some fundamental ways from other labor market participants. The market work of students, particularly students in their teens and early twenties, is often not their principal activity. Students, instead, choose to forego current earnings in order to gain higher compensation in later years. For many older students, however, school is only a minor activity and market work represents their principal focus.

Self-employment: The self-employed present yet another difficulty for the measurement and interpretation of labor market activity. The returns on owning and operating a business (measured as "self-employment earnings" in the census data) surely reflect, at least in part, the returns on individuals' financial investments in their businesses. Thus, it is not possible to separate fully the extent to which self-employment earnings reflect returns on labor or capital. As discussed below, the self-employed tend to have higher earnings than others; there are large

racial differences in the extent of self-employment, and there are important trends in its prevalence over time. Thus, analysis of relative earnings patterns may be influenced by the treatment of this group.

Sensitivity Analysis

The census data permit calculations to be made that either include or exclude any of the "problem" groups described above. Similarly, earnings can be defined to include wage and salary income or total earnings—the sum of wages and salaries and self-employment income.[1]

Tables B.1.1–B.1.2 present basic earnings tabulations for students, the self-employed, and the armed forces in the labor force. The tables report the share of all individuals with earnings in the previous year in these sectors as well as mean levels of weekly and annual earnings for 1950–1980. Data from 1940 are not utilized in this exercise due to the inability to identify earnings for the self-employed and members of the armed forces for that year. Results are first presented for all workers aged 16–64 (table B.1.1) and then separately for 20–24 year olds (table B.1.2), a group particularly affected by treatment of students and the armed forces.

These tables reveal the following, not very surprising, patterns:

- Members of the armed forces have lower money earnings than "other" workers, and the earnings of blacks relative to whites in this sector are high (compared to the "other" sector).
- In 1980 the share of black employment made up by the military is greater than among whites. This is a reversal of the historical pattern.
- Students have lower earnings than "others," and the relative earnings of blacks in this sector are high (compared to the "other" sector).
- The share of workers who are students is higher among whites, but has risen over time for blacks.
- More whites than blacks are self-employed. This difference has grown over time.
- The self-employed have high earnings, and there are large racial differences in earnings among the self-employed.

The impact of the treatment of these groups on earnings ratios is reported in table B.2. This exercise begins with an all-inclusive labor force definition. Students, unpaid family workers, the self-employed, and finally members of the armed forces are then sequentially excluded.

The results indicate that inclusion of students in earnings tabulations tends to equalize racial differences. For the labor force as a whole (ages 16–64), however, the total impact is only about one percentage point. The exclusion of unpaid family workers has a trivial impact on earnings ratios due to the fact that they are a very small share of workers—less than one-third of 1 percent in 1980.

Exclusion of the self-employed narrows racial differences in earnings. This is attributable to the fact that the self-employed are disproportionately white, and there exist substantial racial differences in earnings among the self-employed. The magnitude of this effect, however, has diminished somewhat over time.

When the focus is limited to those not self-employed, utilization of data on wages and salaries (instead of total earnings) raises relative earnings by less than a percentage point. This is due to the fact that white wage and salary workers report more self-employment income than black wage and salary workers.

Finally, the armed forces historically tended to narrow earnings differences by something less than a percentage point, the result of a small earnings gap in this sector. In 1980, however, this pattern was reversed—inclusion of the armed forces widened the pay gap. This issue is discussed in more detail below.

Tables B.2.1–B.2.4 present the results of a similar but more limited exercise that is disaggregated by age group. The base tabulations utilize total earnings and exclude only unpaid family workers. In sequence, students, the self-employed, and armed forces are excluded. The latter tabulations, which exclude the self-employed, are based on wages and salaries alone. The results indicate, not surprisingly, that the exclusion of students lowers earnings ratios substantially for young people but has almost no impact on older workers. In contrast, exclusion of the self-employed raises earnings ratios by several percentage points for older workers and has a small impact on the relative earnings of the young. Similarly, exclusion of the armed forces has little impact on the relative earnings of older workers but

[1] It should be noted that employment class reflects a principal current job. The nonself-employed can have self-employment income as a result of a secondary job or self-employment at some point during the previous calendar year. Conversely, the self-employed can have wage and salary income.

plays an important role in assessing earnings of younger workers.

TABLE B.1.1

Earnings of White and Black Males by Labor Market Group, All Ages

	Students	Self-employed	Armed forces	Others
1980:				
White				
% LF	12.5	11.1	1.9	74.5
Annual	6226	23832	10704	16972
Weekly	193	498	224	362
Black				
% LF	12.9	3.5	4.0	79.6
Annual	5786	14165	7703	11616
Weekly	190	327	169	262
1970:				
White				
% LF	11.5	10.9	3.5	74.1
Annual	4868	23276	8878	16203
Weekly	177	477	199	340
Black				
% LF	8.3	4.4	3.6	83.7
Annual	4297	11148	7248	9987
Weekly	167	246	162	218
1960:				
White				
% LF	7.4	13.5	3.6	75.6
Annual	3889	15707	7460	12267
Weekly	140	326	156	260
Black				
% LF	4.9	6.2	2.6	86.2
Annual	3047	4838	5688	6676
Weekly	104	111	120	154
1950:				
White				
% LF	5.4	18.7	3.2	72.6
Annual	2893	9925	6350	8454
Weekly	104	208	133	185
Black				
% LF	4.0	13.9	1.9	80.2
Annual	2202	2722	3916	4841
Weekly	75	64	87	113

Note: All earnings figures are presented in 1980 dollars, to adjust for inflation.

TABLE B.1.2

Earnings of White and Black Males by Labor Market Group, Ages 20-24

	Students	Self-employed	Armed forces	Others
1980:				
White				
% LF	23.3	3.3	4.4	69.0
Annual	5065	13365	6835	9724
Weekly	160	234	144	224
Black				
% LF	19.4	1.0	10.0	69.5
Annual	4636	5888	5935	7176
Weekly	151	149	130	180
1970:				
White				
% LF	25.3	2.2	12.6	59.8
Annual	4639	10239	5697	9361
Weekly	162	224	124	216
Black				
% LF	11.8	1.5	11.2	75.7
Annual	4338	4928	5096	7284
Weekly	152	120	117	173
1960:				
White				
% LF	19.1	3.0	12.0	65.8
Annual	4241	7662	4728	7421
Weekly	139	168	99	175
Black				
% LF	9.7	2.8	7.9	79.6
Annual	3581	2605	3957	4541
Weekly	111	61	85	113
1950:				
White				
% LF	16.8	6.7	10.0	69.0
Annual	3520	4986	4098	5694
Weekly	113	110	84	133
Black				
% LF	9.3	8.1	7.1	75.5
Annual	2540	1786	3708	3902
Weekly	113	110	84	133

Note: All earnings figures are presented in 1980 dollars, to adjust for inflation.

TABLE B.2

Earnings Ratios Under Alternative Sample Definitions, Black and White Males, Ages 16-64

	1950	1960	1970	1980
Annual earnings				
All workers	51.9	52.7	61.4	66.2
Excl. students	51.1	51.3	59.0	64.9
Excl. students, UFW[1]	51.2	51.3	59.0	64.9
Excl. students, UFW, self-empl.	56.2	54.3	61.9	67.6
Excl. students, UFW, self-empl. (wages and salary only)	57.3	55.2	62.2	68.0
Excl. students, UFW, self-empl., armed forces	56.1	53.5	61.3	68.1
Weekly earnings				
All workers	54.5	56.1	68.4	70.1
Excl. students	54.2	55.5	61.8	68.7
Excl. students, UFW	54.3	55.4	61.8	68.7
Excl. students, UFW, self-empl.	59.4	58.4	64.6	71.3
Excl. students, UFW, self-empl. (wages and salary only)	60.5	59.3	64.9	71.7
Excl. students, UFW, self-empl., armed forces	59.2	57.6	64.0	71.9

[1]Unpaid family workers.

TABLE B.2.1

Black-White Male Earnings Ratios, 1980

Age	UFW	Excluding: UFW, students	UFW, students, self-empl.	UFW, students, self-empl., armed forces
		Annual		
16-19	83.2	76.5	76.1	74.4
20-24	76.5	72.9	73.5	73.8
25-29	76.4	75.5	76.3	76.4
30-34	72.7	72.0	73.4	73.4
35-39	65.5	65.2	68.6	68.4
40-44	63.8	63.6	66.2	66.0
45-49	62.3	61.9	64.7	64.7
50-54	63.2	63.0	65.5	65.6
55-59	61.3	61.3	63.7	63.6
60-64	61.7	61.8	66.2	66.2
Total	66.1	64.9	68.0	68.4
		Weekly		
16-19	96.2	86.1	85.5	85.3
20-24	80.9	78.5	79.1	80.4
25-29	80.7	79.9	80.8	81.3
30-34	76.5	75.8	77.2	77.3
35-39	68.7	68.3	71.7	71.5
40-44	66.8	66.6	69.1	69.0
45-49	65.1	64.8	67.5	67.5
50-54	66.1	65.8	68.4	68.5
55-59	63.2	63.2	65.2	65.2
60-64	62.5	62.6	66.4	66.5
Total	70.1	68.7	71.7	72.3

TABLE B.2.2.

Black-White Male Earnings Ratios, 1970

Age	UFW	Excluding: UFW, students	UFW, students, self-empl.	UFW, students, self-empl., armed forces
			Annual	
16-19	96.3	79.0	80.1	78.0
20-24	86.1	79.3	80.3	77.8
25-29	71.1	69.9	70.9	70.5
30-34	65.0	64.8	66.7	66.2
35-39	59.6	59.4	61.8	61.3
40-44	56.5	56.4	59.7	59.5
45-49	55.4	55.4	58.3	58.4
50-54	55.4	55.3	58.1	58.3
55-59	54.8	54.6	58.5	58.5
60-64	54.9	54.9	57.9	57.9
Total	61.3	59.6	62.2	61.6
			Weekly	
16-19	102.3	86.9	87.9	84.6
20-24	84.7	82.2	83.1	80.2
25-29	72.9	72.3	73.3	72.9
30-34	67.3	67.1	69.1	68.6
35-39	62.0	61.7	64.2	63.8
40-44	58.9	58.8	62.1	62.0
45-49	57.7	57.6	60.5	60.6
50-54	57.5	57.4	60.1	60.2
55-59	56.6	56.5	60.3	60.3
60-64	56.1	56.1	58.9	58.9
Total	63.4	61.8	64.9	64.9

TABLE B.2.3.

Black-White Male Earnings Ratios, 1960

Age	*Excluding:* UFW	UFW, students	UFW, students, self-empl.	UFW, students, self-empl., armed forces
		Annual		
16-19	78.6	69.0	69.9	66.3
20-24	65.7	61.9	63.1	60.2
25-29	61.1	60.0	61.6	60.6
30-34	54.8	54.4	56.9	56.4
35-39	53.2	53.2	56.5	56.3
40-44	50.2	50.2	54.1	54.4
45-49	48.8	48.8	53.0	53.0
50-54	47.2	47.2	51.8	51.8
55-59	48.1	48.1	51.6	51.6
60-64	45.8	45.8	50.3	50.3
Total	52.7	51.3	55.2	54.4

TABLE B.2.3. (Cont'd.)

Black-White Male Earnings Ratios, 1960

Excluding:

Age	UFW	UFW, students	UFW, students, self-empl.	UFW, students, self-empl., armed forces
			Weekly	
16-19	79.8	71.4	72.4	65.5
20-24	68.1	66.9	68.2	65.0
25-29	65.1	64.6	66.2	65.3
30-34	59.2	58.9	61.4	61.0
35-39	57.4	57.4	60.7	60.6
40-44	59.1	54.1	58.1	57.9
45-49	52.4	52.4	56.6	55.6
50-54	51.0	51.0	55.7	55.6
55-59	51.8	51.8	55.3	55.4
60-64	49.6	49.6	54.0	54.0
Total	56.2	55.5	59.3	58.6

Note: School enrollment not asked of individuals ages 35+ in 1960.

TABLE B.2.4.

Black-White Male Earnings Ratios, 1950

Age	UFW	*Excluding:* UFW, students	UFW, students, self-empl.	UFW, students, self-empl., armed forces
			Annual	
16-19	83.2	74.2	73.7	71.6
20-24	70.5	67.3	69.8	68.6
25-29	61.4	60.5	64.1	64.2
30-34	54.3	54.3	59.9	60.0
35-29	52.5	52.9	58.0	58.0
40-44	49.3	49.3	55.6	55.5
45-49	47.2	47.2	53.9	53.9
50-54	45.5	45.5	53.1	52.9
55-59	46.5	45.5	51.6	51.6
60-64	45.7	49.7	54.2	54.1
Total	52.5	51.4	57.4	57.3
			Weekly	
16-19	71.8	68.1	67.7	63.7
20-24	69.3	68.9	71.4	70.0
25-29	65.2	64.7	68.7	68.9
30-34	58.1	58.1	64.0	64.1
35-39	56.3	56.3	62.0	62.0
40-44	52.4	52.4	59.0	58.8
45-49	49.6	49.6	56.3	56.4
50-54	47.9	47.9	55.6	55.5
55-59	49.1	49.1	54.8	54.0
60-64	48.7	48.7	57.1	57.0
Total	54.8	54.4	60.6	60.4

Note: School enrollment not asked of individuals ages 30+ in 1950.

Appendix C

Regression Analysis: Methodology and Estimates

This appendix first describes the statistical methods used to estimate the sources of the black-white gap in earnings and presents alternative estimates of the residual difference in black-white earnings. Next, it presents the regression coefficients upon which table 6.1 in chapter 6 is based.

Frameworks for Analyzing Earnings Differences

Regression analysis is frequently used to estimate racial differences in earnings. The basic idea is to examine how much of the earnings gap remains after adjusting for age, education, and other important determinants of earnings. One method for answering this question is to combine both blacks and whites into a single regression and to include a variable to measure the individual's race:

$$(1) \qquad ln\ Y_i = X_i b + Z_i d + e_i$$

where $ln\ Y_i$ reflects the natural log earnings of individual i; X is a matrix of socioeconomic characteristics; b is a conformable vector of coefficients; Z is a dummy variable that equals unity if an individual is a member of a particular race and is zero otherwise, and d is its coefficient; e_i is a random error term with expected value zero. The coefficient d shifts the intercept of regression equation (1) and reflects residual group differences in earnings for individuals holding measured characteristics (X) constant.

The functional form of (1) imposes the restriction that the coefficients (b)—the implicit returns on worker characteristics such as education, etc. – are the same across race or gender groups. As such, estimated group differences in earnings are assumed to be independent of the characteristics, X.

It is likely, however, that there are systematic differences across groups in the returns on characteristics. A more general framework for analyzing earnings differences, developed by Blinder (1973) and Oaxaca (1973), is to "decompose" the gross differential into portions attributable to differences in group characteristics (X) and to differences in coefficients (b). This requires estimating two different regressions – one for blacks and one for whites. Thus, at sample means the following relationships hold:

$$(2)\ (i) \qquad ln\ Y_w = X_w b_w$$

$$(2)\ (ii) \qquad ln\ Y_b = X_b b_b$$

The group difference in earnings can be written:

$$(3) \qquad ln\ Y_b - ln\ Y_w = X_b b_b - X_w b_w$$

Adding and subtracting $X_w b_b$ to (3) yields:

$$(4) \qquad ln\ Y_b - ln\ Y_w = (X_b - X_w) b_b + (b_b - b_w) X_w$$

Equation (4) decomposes the difference in mean earnings between blacks and whites into a term reflecting the difference in characteristics (weighted by black coefficients) plus a term measuring the difference in factor payments (weighted by the white characteristics). The second term reflects the change in earnings for whites if they received the same return on characteristics as blacks. One minus this term is often referred to as the "unexplained" residual difference in earnings because it measures what the black-white earnings gap would be if blacks and whites had the same characteristics but received different monetary returns on those characteristics. This residual reflects a variety of factors, including, for example, discrimination and racial differences in the "quality" of characteristics, such as schooling. Although the decomposition in (4) is not unique – the alternative method is presented

in table C.2 – it is the most frequently implemented (table C.1).

TABLE C.1

Effects of Differences in Characteristics on the Wage Gap

	Black-white earnings ratio:		Increase in earnings ratio adjusting for characteristics[b]	Percent of gap due to differences in characteristics[c]
	Unadjusted	Adjusted[a]		
1940				
25-34	48.7	70.0	43.7	41.5
35-44	44.9	60.6	35.0	28.5
45-54	42.7	58.4	36.8	27.4
55-64	42.6	57.7	35.4	26.3
1950				
25-34	64.9	79.2	22.0	40.7
35-44	59.3	74.5	25.6	37.3
45-54	56.3	67.7	20.2	26.1
55-64	54.2	69.0	27.3	32.3
1960				
25-34	62.3	75.1	20.5	34.0
35-44	58.4	72.7	24.5	34.4
45-54	55.7	71.1	27.6	34.8
55-64	53.2	68.3	28.4	32.3
1970				
25-34	70.3	81.5	15.9	37.7
35-44	62.8	74.9	19.3	32.5
45-54	59.5	73.9	24.2	35.6
55-64	58.9	74.4	26.3	37.7
1980				
25-34	78.8	87.4	10.9	40.6
35-44	70.5	80.9	14.8	35.3
45-54	67.5	77.9	15.4	32.0
55-64	65.0	75.7	16.5	30.6

[a] Assumes black males have the average characteristics of white workers. These characteristics consist of: years of schooling completed, years of potential work since school, region of residence, industry of employment, and marital status.
[b] This is the percentage increase in the earnings ratio when white characteristics are assigned.
[c] [Column #2 – Column #1]/[100 – Column #1] X 100.

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TABLE C.2

Effects of Differences in Characteristics on the Wage Gap

	Black-white earnings ratio:		Increase in earnings ratio adjusting for characteristics[b]	Percent of gap due to differences in characteristics[c]
	Unadjusted	Adjusted[a]		
1940				
25-34	48.7	69.5	42.7	40.5
35-44	44.9	66.7	48.6	39.6
45-54	42.7	63.9	49.6	37.0
55-64	42.6	65.4	53.5	39.7
1950				
25-34	64.9	78.9	21.6	39.9
35-44	59.3	75.6	27.5	40.0
45-54	56.3	74.7	32.7	42.1
55-64	54.2	74.8	38.0	45.0
1960				
25-34	62.3	77.0	23.6	39.0
35-44	58.4	77.5	32.7	45.9
45-54	55.7	78.3	40.6	51.0
55-64	53.2	74.3	39.7	45.1
1970				
25-34	70.3	81.0	15.2	36.0
35-44	62.8	78.8	25.5	43.0
45-54	59.5	79.3	33.3	48.9
55-64	58.9	80.3	36.3	52.1
1980				
25-34	78.8	87.1	10.5	39.2
35-44	70.5	82.9	17.6	42.0
45-54	67.5	82.8	22.7	47.1
55-64	65.0	83.2	28.0	52.0

[a] Assumes black males have the average characteristics of white workers. These characteristics consist of: years of schooling completed, years of potential work since school, region of residence, industry of employment, and marital status.
[b] This is the percentage increase in the earnings ratio when white characteristics are assigned.
[c] [Column #2 – Column #1]/[100 – Column #1] X 100.

TABLE C.3

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 25-34

	1940	1950	1960	1970	1980
Years of schooling[2]					
0-12 years					
Black	4.2	2.9	4.1	5.6	7.0
White	8.3	5.9	8.0	7.6	9.3
13+ years					
Black	7.7	3.8	5.2	7.3	7.1
White	9.9	4.8	6.9	7.8	6.9
Years of work experience[3]					
Black	1.7	0.8	1.5	1.7	2.5
White	3.2	2.3	3.0	2.9	3.5
Region (reference = Northeast)[4]					
North Central					
Black	− 2.3	5.4	6.3	4.9	14.3
White	− 6.5	2.0	2.6	− 0.3	5.7
West					
Black	− 0.6	9.1	0.9	− 4.0	5.2
White	1.7	7.4	5.8	− 0.8	4.9
South					
Black	−38.9	−29.0	−31.3	−25.0	− 5.2
White	−19.0	− 7.2	−10.6	−11.1	− 1.7

TABLE C.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 25-34 (Cont'd.)

	1940	1950	1960	1970	1980
Industrial sector (reference = private nonagriculture)[5]					
Agriculture					
Black	−68.4	−66.5	−63.5	−53.5	−42.6
White	−74.2	−68.2	−59.9	−39.0	−31.2
Government					
Black	7.9	6.6	6.5	1.4	− 3.4
White	− 8.2	− 7.3	−14.5	−10.8	−14.6
Other industry					
Black	−19.3	−30.5	−17.6	−14.6	−30.2
White	−51.8	−14.0	−33.3	−30.2	−35.9
Marital status (reference = nonmarried)[6]					
Black	8.9	12.1	16.8	14.0	15.5
White	17.9	17.7	20.7	18.7	18.2
Intercept					
Black	− 1.44	3.38	3.60	3.96	4.30
White	− 1.73	3.04	3.21	3.76	4.08

*See notes at end of table.

TABLE C.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 35-44

	1940	1950	1960	1970	1980
Years of schooling[2]					
0-12 years					
Black	2.0	2.5	2.5	3.2	5.2
White	8.2	4.9	6.1	6.0	7.2
13+ years					
Black	5.1	2.2	4.6	7.4	6.8
White	15.1	8.3	7.9	9.5	8.7
Years of work experience[3]					
Black	0.1	0.0	− 0.1	0.3	0.4
White	1.8	1.0	0.7	0.9	1.2
Region (reference = Northeast)[4]					
North Central					
Black	− 1.6	8.9	7.4	4.3	16.1
White	− 7.6	− 0.2	19.9	0.6	3.6
West					
Black	−15.6	10.8	3.3	1.4	4.4
White	− 3.1	5.4	4.1	0.9	4.1
South					
Black	−39.2	−29.8	−32.1	−25.6	− 9.6
White	−20.3	−11.2	−10.1	−10.3	− 4.9

TABLE C.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 35-44 (Cont'd.)

	1940	1950	1960	1970	1980
Industrial sector (reference = private nonagriculture)[5]					
Agriculture					
Black	−75.7	−58.0	−82.9	−56.0	−37.7
White	−81.6	−65.4	−66.9	−47.6	−38.3
Government					
Black	9.2	0.6	7.5	3.9	− 4.8
White	−10.7	−15.2	−16.4	−14.2	−19.3
Other industry					
Black	−32.1	13.8	−10.4	− 9.3	−14.5
White	−68.4	−11.4	−17.5	−23.7	−32.0
Marital status (reference = nonmarried)[6]					
Black	10.8	11.5	14.7	16.0	17.3
White	23.8	22.0	24.8	23.6	20.1
Intercept					
Black	− 0.92	3.61	4.10	4.41	4.86
White	− 1.52	3.33	3.75	4.17	4.67

*See notes at end of table

TABLE C.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 45-54

	1940	1950	1960	1970	1980
Years of schooling[2]					
0-12 years					
Black	1.3	1.0	1.4	2.2	2.4
White	6.3	4.5	5.6	5.4	5.2
13+ years					
Black	5.9	− 1.4	4.5	7.3	6.8
White	15.8	8.1	8.8	9.7	9.2
Years of work experience[3]					
Black	− 0.4	− 0.5	− 0.4	− 0.4	0.2
White	0.1	0.3	0.1	− 0.1	0.2
Region (reference = Northeast)[4]					
North Central					
Black	− 2.2	5.3	10.8	5.6	15.4
White	− 7.2	− 3.6	0.5	0.1	4.8
West					
Black	− 2.4	2.1	4.0	− 1.0	2.9
White	− 5.2	− 0.3	1.9	2.0	4.9
South					
Black	−38.3	−29.9	−34.8	−28.9	−14.3
White	−19.8	−14.5	−13.9	− 9.8	− 4.7

TABLE C.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 45-54 (Cont'd.)

	1940	1950	1960	1970	1980
Industrial sector (reference = private nonagriculture)[5]					
Agriculture					
Black	−74.4	−55.8	−84.3	−65.6	−58.7
White	−90.6	−79.3	−75.1	−50.6	−37.2
Government					
Black	11.0	4.7	7.4	3.1	3.2
White	−11.0	−14.0	−18.2	−13.2	−18.1
Other industry					
Black	−31.5	20.6	−10.6	−27.9	−23.0
White	−72.7	−12.6	−20.2	− 3.8	− 9.8
Marital status (reference = nonmarried)[6]					
Black	12.6	16.2	14.8	20.7	20.1
White	24.8	24.2	26.8	25.8	21.9
Intercept					
Black	− 0.73	3.87	4.29	4.67	5.19
White	− 0.83	3.58	3.96	4.47	5.12

*See notes at end of table.

TABLE C.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 55-64

	1940	1950	1960	1970	1980
Years of schooling[2]					
0-12 years					
Black	− 0.5	− 0.4	− 0.3	0.7	0.7
White	6.0	2.4	4.7	4.6	3.8
13+ years					
Black	4.6	4.3	3.7	5.7	4.7
White	14.0	5.2	8.1	9.8	8.0
Years of work experience[3]					
Black	− 1.3	− 1.5	− 0.9	− 1.2	− 0.8
White	− 0.3	− 1.3	− 0.2	− 0.3	− 1.1
Region (reference = Northeast)[4]					
North Central					
Black	− 1.8	13.0	8.6	7.2	15.8
White	− 6.6	− 3.5	1.0	− 0.2	5.4
West					
Black	−19.6	19.1	5.5	0.7	5.0
White	− 1.8	0.3	− 0.1	1.6	6.8
South					
Black	−39.9	−22.5	−39.6	−33.8	−17.5
White	−15.8	−20.0	−15.0	−12.0	− 3.6

TABLE C.3 (Cont'd.)

Estimated Effects of Worker Characteristics on Weekly Earnings by Race[1]

Age Group 55-64 (Cont'd.)

	1940	1950	1960	1970	1980
Industrial sector (reference = private nonagriculture)[5]					
Agriculture					
Black	−70.5	−80.8	−92.3	−53.0	−49.5
White	−91.1	−85.9	−78.6	−59.3	−49.0
Government					
Black	6.3	− 3.7	4.2	3.5	7.2
White	− 8.2	−15.7	−18.0	−13.8	−15.5
Other industry					
Black	−28.8	—	−17.9	−36.7	14.8
White	−73.8	11.3	−33.4	−25.3	− 6.7
Marital status (reference = nonmarried)[6]					
Black	11.1	12.5	16.9	18.4	21.5
White	23.9	21.3	24.8	25.6	21.8
Intercept					
Black	− 0.19	4.36	4.63	5.18	5.69
White	− 0.67	4.48	4.21	4.62	5.75

[1] Each estimated coefficient, or "return," is derived from a multiple regression of weekly earnings on the five variables indicated in the table. Separate estimates are made by age group, race, and census year. They are interpreted as percentage changes in earnings due to a change in the characteristic.
[2] The return on schooling is estimated separately for years 0-12 and for years 13 and over. It measures the percentage increase in earnings associated with a year of schooling.
[3] This is the return on one year of potential work experience.
[4] Each estimate indicates the (percentage) earnings difference associated with living in the particular region in contrast to living in the Northeast region.
[5] Each estimate indicates the (percentage) earnings difference associated with working in the particular sector in contrast to working in a private nonagricultural industry. A residual category of "other industries" was also included but is not reported to save space.
[6] Each estimate indicates how much more a married man earns than an unmarried man (in percentage terms).

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Appendix D

Black-White Earnings Ratios

TABLE D.1

Black-White Earnings Ratios by Region and Education

	Annual earnings			Weekly earnings			Hourly earnings		
Ages 25-34	**1940**	**1960**	**1980**	**1940**	**1960**	**1980**	**1940**	**1960**	**1980**
Non-South									
8-11 years	69.6	75.7	80.0	70.1	80.8	87.3	70.1	86.7	94.6
High school	67.1	71.5	80.7	70.6	75.6	85.5	70.6	81.6	91.0
College	ns	72.9	88.3	ns	73.3	91.4	ns	77.9	96.5
All levels	63.2	69.5	79.7	66.9	74.0	84.9	66.9	79.2	91.4
South									
8-11 years	58.5	60.5	77.3	59.8	64.4	80.4	59.8	68.4	86.8
High school	51.1	59.7	76.1	53.1	63.2	79.5	53.1	65.6	86.4
College	49.8	62.2	81.0	55.7	68.4	83.5	55.7*	73.0	90.2
All levels	45.2	53.7	73.3	42.4	57.6	77.1	47.4	60.7	83.8
All regions									
8-11 years	61.8	67.4	77.4	62.3	71.6	81.6	62.3	75.8	87.1
High school	59.8	66.1	76.9	61.9	69.8	80.5	61.9	74.6	85.9
College	55.9	66.7	84.6	61.2	69.9	87.0	61.2	73.9	92.2
All levels	46.6	59.6	75.3	48.9	63.7	79.4	48.9	67.2	85.2

Ages 45-54

Non-South									
8-11 years	64.4	73.7	84.8	62.2	76.8	87.6	62.2	82.2	93.1
High school	48.8	65.3	81.1	51.3	69.4	84.2	51.3*	73.6	89.3
College	ns	47.8*	71.5	ns	50.4*	73.9	ns	55.4*	79.6
All levels	49.4	63.6	72.2	51.9	68.1	75.1	51.9	72.2	80.1
South									
8-11 years	45.5	58.6	69.2	48.0	61.0	72.3	48.0	65.0	78.7
High school	ns	54.0	69.9	ns	55.1	72.1	ns	60.1	76.5
College	ns	54.2	62.7	ns	58.6	66.8	ns	61.9	71.3
All levels	34.4	47.3	60.6	36.5	50.2	63.4	36.5	54.2	68.8
All regions									
8-11 years	55.2	66.3	77.3	56.4	69.1	79.1	56.4	72.3	84.6
High school	39.8	60.8	75.8	42.4	65.7	78.5	42.4	67.8	82.9
College	24.2*	49.4	66.9	26.4*	52.8	78.5	26.4*	55.9	74.8
All levels	38.2	52.5	65.4	40.3	56.2	68.2	40.5	57.6	68.7

*Based on less than 100 observations, but more than 50 observations
ns = not statistically reliable

Source: Census of Population, 1940-1980, Public Use Sample

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